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ABSTRACT

The four papers presented in this symposium provide the overall picture, the rationale, and the methodology for a study on self-hypnosis done at the University of Chicago. Methodologically, the main thrust of this investigation was introspective. The authors recognized the need for more careful criticism of the status of verbal reporting in hypnosis research. Careful consideration was given to: (1) the question of choice of subjects and their training; (2) demand characteristics in introspective study; (3) the status of data collection from the experience of a state of consciousness; (4) the development of a hermeneutic, i.e., a theory of interpretation devised to control the treatment of verbal reports; and (5) a system of intersubjective comparison. The state of development of this study necessitated that the study be primarily one of hypothesis generation; however, an attempt was made to preserve the unique nature of each subject's experience. (Author/PC)

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The Relationship between Self-hypnotic Experience and Personality Factors as Revealed in Psychological Testing

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Within the context of our exploratory study of self-hypnosis, we asked the following question: In what ways might the personality of a subject, as indicated by his performance on psychological tests, help account for his particular way of experiencing self-hypnosis?

We assumed that to some extent the six subjects in the study would handle the experience of self-hypnosis differently from one another. From earlier research in our laboratory we had an idea of what some of the differences might be; however, we had little indication of what personality differences might be correlated with these differences in experiencing self-hypnosis. Consequently, prior to the self-hypnosis experiment we administered a variety of psychological tests, some objective and some projective, in order to gain some idea of the relevant personality differences. We did not plan to arrive at definitive conclusions, but rather to derive hypotheses--which would be amenable to future investigation--regarding the interaction of self-hypnotic experience and personality.

It should be added that we realized other variables, such

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as the current interests of the subjects at the time of the experiment and personal relationships of the subjects to the experimenters, would contribute to the differences in self-hypnotic experience. But we expected that personality factors would play a large role and that psychological testing would bring out some of these factors; thus far our analysis of the data has confirmed our expectations.

The Minnesota Multiphasic Personality Inventory, the Personal Orientation Inventory, and the Rorschach test were administered to the subjects before they began their self-hypnotic experience.

The MMPI is particularly useful in illustrating conflict, depression, and coping styles. The POI, based on Maslow's theory of the self-actualizing person, emphasizes capabilities and potentialities, as opposed to pathology.

We have scored the Rorschach responses according to both the Klopfer system and Robert Holt's primary process scoring system. The latter illustrates a subject's facility at working with primary process material. Previous research at our laboratory has shown that use of the primary process increases dramatically in hetero-hypnosis, and we also had had indications that primary process plays a role in self-hypnosis. The interpretations of our Ss' records were done blindly by Robert Holt.

In addition, we administered the Thematic Apperception Test some time after the experiment with self-hypnosis. The reason for this post-experiment test was that the initial examination of the research data had suggested that certain issues, which the TAT might help illustrate, seemed relevant to the self-hypnotic experience, such as the subject's concern with fantasizing and his feelings about aloneness.

We are currently completing our analysis of the data and shall present the results at the symposium.

Adaptation and Cognitive Strategies in Self-Hypnosis:

A Case Study

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The question of adaptation to the hypnotic state, be it self of other indiced, has never been explored in the literature. This may be due to the lack of experiments of long duration wherein one would be able to trace adaptation.

The S in hetero-hypnosis has a well defined and limited framework within which to experience the state. In auto-hypnosis on the other hand, the S must take on the job of constructing his experience; to direct as well as participate in it. This paper proposes that, to a naive S, the auto-hypnotic experience at first presents itself as an unfamiliar state. This state must be adapted to. Once adapted to it is molded according to the S's cognitive strategies. To go one step further, the individual personality of the S is manifested in his continuous mode of adaptation to the state. The structure of both experiences seems to imply that there is a great deal more room for personality-dependent variation in auto-hypnosis than there is in hetero-hypnosis.

This paper describes the conscious and unconscious "efforts" of one S, Sabrina, to adapt to the auto-hypnotic state. Sabrina, a young, black woman of superior intelligence and motivation (a graduate student at the University of Chicago) was one of six Ss who participated in the month-long study of auto-hypnosis. Explicit instructions as to the handling of the experience were intentionally not given by the experimenters. On the contrary, the Ss were told to create the experience for themselves and spend the allotted time in any manner desired.

In a study of adaptation and personal cognitive strategies, the importance of the Ss' journals as a source of data in the exploration of auto-hypnosis becomes obvious. A very detailed reading of Sabrina's journal elucidated the manner in which she sought first to familiarize herself and later to adapt to her auto-hypnotic experience. As a point of comparison, reference will sometimes be made to the journal of Ezra, whose method of adaptation to the state was quite different from that of Sabrina.

This case study was intentionally done without any knowledge of the results of the personality tests that each S was given. Conclusions rest solely on the understanding derived from a thorough reading of the Ss' journals. Auto-hypnosis, being the personal experience that it is, seems to be amenable to preliminary research of an idiographic or "intra-subject" nature. However, concepts of the type developed within a paper such as this one, must later be verified through comparison with the results of the personality tests given to the S and the synchronic and diachronic study of her interview material on auto-hypnotic phenomena.

Diachronic Methodology in the Study of Self-Hypnosis

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According to a methodological program first made explicit by the Swiss linguist, Saussure, synchronic and diachronic analyses represent two completely autonomous and irreconcilable methodological options often leading to two very separate classes of results which, however, need not yield exclusive sets of conclusions.

The greater bulk of hypnosis research--research on hypnotic behavior, hypnotic susceptibility, and the hypnotic state--suggest a virtual monopoly of synchronic experimental design. There have been few notable studies following changes in certain aspects of hetero-hypnosis over the course of time. Largely, diachronic analysis has not been explicitly applied to hetero-hypnosis research.

An experimental design was constructed to test synchronic and diachronic methodological options simultaneously. In the latter analysis, six Ss were asked to keep journals each day recording intensive SH experience over a four week span. Free-floating interviews on SH were given at two and four week intervals. A diachronic analysis was employed at the end of the data collection by analyzing the journals and by comparing the first and second interviews. Only direct statements made by Ss in the journals or interviews concerning changes in self-hypnotic experience were scored. These changes in aspects of SH over time were taken as diachronic facts.

The diachronic facts were arranged into a number of categories. Although the data analysis is not yet complete, several results are clear. Taken as a whole, abundant evidence for diachronic change in SH is available. Changes within the specific categories vary with individual Ss, but certain diachronic changes were noted for all Ss. The changes in SH over the four weeks were according to the following categories: initial vs. final reaction to the SH experience; ease of induction; kinds of self-suggestions used and style of carrying out the suggestions; depth of trance; interpretation of the SH experience; changes in secondary and primary process; changes in attention and concentration; changes in memory, especially the occurrence of hypermnesia and spontaneous age regression; changes in activity-passivity; changes in awareness of internal physiological and mental processes.

The self-hypnotic experience at the end of four weeks was different enough from the initial self-hypnosis for all Ss to warrant serious consideration in future study. A detailed questionnaire meant to test diachronic methodology in self-hypnosis with a large number of Ss was constructed from the investigation.

In the discussion section of the paper, several basic concepts toward a diachronic theory of self-hypnosis are considered: adaptation to the self-hypnotic state, automatization in self-hypnosis, cognitive strategies in SH, mindfulness of internal process in SH. The implications of diachronic methodology for the study of self-hypnosis are discussed. An attempt is made to tie diachronic analysis into the mainstream of ASC research in general as well as into hypnosis research more specifically.

The dual design of this research opens the possibility of relating synchronic and diachronic methodology in SH research. One implication is that synchronic study taken after Ss experience self-hypnosis over a significant period of time may yield different results from one taken with naive subjects. In this sense, conclusions from synchronic and diachronic studies need not be incompatible; a diachronic analysis may contribute to the more accurate collection of synchronic facts about self-hypnosis.

Self-Hypnosis: A Synchronic Study

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In the synchronic study we shall concern ourselves with the phenomena of self-hypnosis regardless of when our Ss experienced them, in the beginning or only towards the end of the month-long experiment.

The senior author and four assistants, independently from each other, analyzed the journals of the six Ss and all individual interviews which they had been given at the midpoint of the experiments and at termination, as well as the group discussion held a month after termination.

The purpose of this analysis was to develop a list of heuristic categories derived from the self-hypnosis texts which would allow for initial generalizations about self-hypnotic experiences, later to be tested, on a larger and more diverse population by means of standard statistical procedures. The categories were derived from ordering and classifying the data. An attempt was made to name the interpretative categories after those found in the tradition of experimental and ego psychology wherever possible, inventing new categories only when necessary. Since our aim was hypothesis generation, an attempt was made to collect the largest possible list of categories. After independent analysis the lists of categories were compared and modified.

The phenomena of self-hypnosis will be compared to those of hetero-hypnosis and similarities and differences will be pointed out.

AN IDIOSYNCHRONIC LONG-TERM STUDY OF SELF-HYPNOSIS

Erika Fromm

University of Chicago

Paper read at the 1974 APA Convention as part of the Symposium: An Investigation of Self-Hypnosis from a Variety of Methodological Perspectives

Self-hypnosis is a new field of research currently emerging. Hardly any serious research has been done on it so far. Until a few years ago, with but five exceptions--Liébault (1885), Baudoin (1920), Coué (1922), Salter (1941), and Weitzenhoffer (1957)--the literature on self-hypnosis has been produced by quacks and laymen.

Within the context of such paucity of scientific research background, our current studies on self-hypnosis were conceived and begun in 1972. Simultaneously, Ronald E. Shor (Shor and Easton, 1973) and Ernest R. Hilgard (1973) and his student, J. C. Ruch (1972), started research in this field.

Basic Questions

The fundamental questions we addressed ourselves to in our research on self-hypnosis were:

Are the phenomena of self-hypnosis the same as those of hetero-hypnosis?

What are the basic characteristics of self-hypnosis?

What is the self-hypnotic state?

Does it remain the same over time?

It has always been assumed that self-hypnosis is similar to hetero-hypnosis (induced by an outside person). While one may assume that self-hypnosis and hetero-hypnosis share a common basis, we hypothesized essential differences. This study was designed to confirm (or disconfirm) that hypothesis, and to establish preliminary norms for self-hypnosis.

In this Symposium our extensive set of data will be analyzed from a variety of methodological perspectives:

a) from an idiosynchronic point of view (in my paper)

b) from a diachronic point of view (in Dan Brown's paper)

c) through "case studies" of each S's adaptive and cognitive strategies in self-hypnosis (in Joab Oberlander's paper)

d) and from the viewpoint of personality theory, attempting to derive hypotheses regarding the interaction of the self-hypnotic experience and personality (in Jim Anderson's paper)

Idiosynchronic and Diachronic Methodologies

The concepts of synchronic and diachronic methodologies are widely used in linguistics and anthropology, but they are not too familiar to psychologists.

They were first developed by the brilliant Swiss linguist

Ferdinand de Saussure. According to de Saussure (1959), an idiosynchronic study is a study which reports a state of affairs, the existence of a number of facts or phenomena; and analyzes, catalogues, classifies, and categorizes them, regardless of at what point in time they occurred. A diachronic study is a longitudinal study, dealing with changes over time, with *process*.

The idiosynchronic analysis of our data will deal with self-hypnosis as an altered *state*; the diachronic one with self-hypnosis as a *process*.

Whereas the central purpose of the research reported here is to generate hypotheses about the nature of self-hypnosis, an attempt was also made to preserve the unique nature of each S's experience, i.e., nomothetic and ideographic methodological options will be compared. To this end, we will compare the personality test results and the individual "case material" as gleaned from a careful analysis of each individual S's journal.

Methods of Procedure

As the data for the four studies to be reported today all stem from the same set--which then was analyzed from different methodological perspectives--I shall now present to you the Method of Data Collection used for the four papers constituting this Symposium.

Prior to the experiment, all Ss were given three personality tests in the waking state: the Rorschach; the MMPI; and Shostrom's Personality Orientation Inventory (POI); and three Hypnotic

Susceptibility Scales; the Harvard Group Scale of Hypnotic Susceptibility (HGSHS, Shor and Orne, 1962); the Stanford Profile Scales Form I (Weitzenhoffer and Hilgard, 1967); and Shor's Inventory of Self-Hypnosis (ISH, Shor 1970).

Then the Ss were asked to undertake the experiment: about an hour of self-hypnosis daily, for a full month, at a time and place of their own convenience. They were told that they could follow the guidelines set in what they had practiced previously with the three hypnotic susceptibility scales; but they were encouraged not to limit themselves only to these tasks. The lack of structuring of the self-hypnotic experience was intentional. We did not wish to limit the scope of phenomena to be experienced and reported to phenomena basically known from hetero-hypnosis. Ss were requested to keep a detailed daily journal of their self-hypnotic experiences, writing reports immediately after termination of each self-hypnotic experience. Depth estimates, made with Tart's Self-Report Scales of Hypnotic Depth (Tart, 1970), were to be included. In addition each S was interviewed individually for 1-2 hours after the first and after the second fortnight, as well as a month after they all had finished. All interviews were taped and transcribed. The Ss' journals, together with the tapes, form the research data of the four studies presented in this Symposium. As the journals and transcribed tapes are essentially 'texts', they are thereby subject to hermeneutic considerations.

Six unpaid volunteer Ss were chosen, three male, three female, all highly hypnotizable and introspective. Their motivation for participating in the experiment were: curiosity about hypnosis; an exploratory spirit; and the desire to learn something about themselves.

Four of my students and I have coded and analyzed independently from each other the daily journals, the individual interviews, and the group discussion held a month after termination. The purpose of our analyses was to develop a list of heuristic categories derived from the self-hypnosis texts which would allow for initial generalizations about the self-hypnotic experience. Since our aim was hypothesis generation, an attempt was made to collect the largest possible list of categories on which the five researchers could concur after having first independently analyzed the data.

Evidence was considered relevant if there were direct statements made by the Ss as to phenomena experienced in self-hypnosis.

Analysis of the Data

Our major criticism against a self-hypnosis pilot study we ourselves ran in 1971-72 and on which I reported to you last year (Fromm, in press) is the doubt as to whether a single self-hypnotic experience can actually reveal the most salient features of self-hypnosis. This criticism holds also for Shor and

Easton's (1973), Hilgard's (1974), and Ruch's (1972) self-hypnosis research, i.e., all those that use only one to three self-hypnotic experiences. Such research completely ignores changes in self-hypnotic phenomena over time. The criticism does not hold for our current idiosynchronic study because in this study the data stem from daily reports, early on and late, covering a period of one full month.

Let us now proceed to the idiosynchronic study.

The aim of our idiosynchronic study is to set up the constituents of the self-hypnotic state or system. In the Idiosynchronic Analysis of the data we concern ourselves with the phenomena of self-hypnosis regardless of when our Ss experienced them, whether at the beginning or at the end of our month-long experiment.

Results

In cataloguing the phenomena of self-hypnosis the following categories emerged:

1. Adaptive Regression: Ego Receptivity
2. Ego Activity
3. Dissociation of Ego Functions (Ego Splits)
4. Imagery
5. Attention and Concentration
6. Interpersonal Processes
    a. Presence or absence of a fantasized outside hypnotist

  b. Role playing
7. Similarities and Differences between self-hypnosis and hetero-hypnosis
8. Failures in, or limits of self-hypnosis

9. The Developing of Skill and Adaptation to the self-hypnotic state
  a. Automatization
10. Physiological Techniques and becoming aware of physiological processes
11. Spontaneous Age Regressions and Hypermnesias
12. GRO and Trance levels
13. Personality Factors
14. Personal Purposes
15. Self-hypnosis viewed as a special altered state of consciousness
16. Dreams and Daydreams
17. Cognitive Strategies and Organization
18. Sensations
19. Hallucinatory Activity
20. Diachronic Changes

I shall discuss the first eight categories (briefly--on account of time limits). The other 12 will be discussed by my three students here, from different angles.

1. Adaptive Regression: Ego Receptivity

Ego receptivity is a state in which the ego relinquishes conscious control and allows pcs. and ucs. feelings, thoughts, and imagery to float into awareness. For example: Kevin found that "imagery is hard to get in self-hypnosis when attempting, but easy when not attempting."

Frequently a substratum of the ego allows itself to become receptive while another part keeps control. Ezra wrote in his Journal: "Induction: closed my eyes and waited to go into trance. Gave myself direction in the passive tense, e.g. 'It will come about that I will go into trance.'" (DNB12) In these cases a part of the ego becomes the "subject," the "listener," receptive to following along with the suggestions that the more active "hypnotist" part of the ego gives.

Three of our Ss described ego receptivity clearly in their notebooks. Supporting data are available from the other three Ss.

Our Ss found themselves spontaneously using ego receptivity for Induction, the giving of suggestions, for writing poetry, and for allowing imagery or forgotten memories to arise from within.

2. Ego Activity

The most important ego activity is the making of decisions. In our data we found this ego activity, and attempts at active mastery, in most of our Ss; in some more often and in some less often. In Ezra, who is an experimenter by nature, it occurred most frequently in the first two weeks. He only slowly learned to allow himself to become more and more receptive. On the other hand, Gwen usually went spontaneously and effortlessly into a receptive state in which imagery, dreams, and spontaneous age regressions would appear. If in any of those a topic came up which she wanted to explore, she switched to a more ego active state of trance, in which she would concentrate hard on the problem at hand and give herself clear-cut suggestions in the second person. (FI 13-16)

Naomi took great pleasure in vacillating between ego activity and ego receptivity in self-hypnosis. And Kevin gave some splendid examples of the fluid changing back and forth between ego activity and ego receptivity that seems to us to be one of the characteristics of self-hypnosis. Unfortunately, there is not enough time to give you the quotes.

3. Dissociations of Ego Functions (Ego Splits)

Ample material of dissociative ego splits is available from *all* of our Ss' notebooks. Various types of ego splits have been recorded. The ego may split into a hypnotizing direct*or* who gives the directions, and the direct*ed* listener who follows them; or into three: the hypnotist, subject, and observer; or even into four: the fourth being the voice of doubt as to whether one will succeed. A good example of how highly dissociated from each other two parts of the ego can be in self-hypnosis is Gwen's journal entry on Day 27. The observing part of the ego here innocently says that she can understand what the experiencing part of the ego feels while playing the piano passionately. But the subject or the experiencer roundly refutes the observer, telling her that she is so much of a different "person" that she cannot possibly feel what she, the experiencer, feels.

> I sat in my room with very soft music on the stereo and tried entering trance by imagining a scene: I am at the piano playing...at first when constructing the picture there was the hypnotist and the subject within me. But when the basic scene was set and things began happening spontaneously, there were two different me's; the observer, (me sitting on the bed looking on) and the subject (me at the piano). I saw myself at the piano and I felt myself at the piano. An argument set in between the two parts of me: the observer said that he could understand what the subject felt while playing. The subject refuted him and said, "You can *try* to understand what I'm feeling, but you don't *really* know, you can't really feel it like I do. You can't experience the emotions exuding within me like I do, no matter what you say." (FNB 26)

Gwen also reports an example of spontaneous age regression in which the adult observing ego watches the child.

The dissociative phenomena of ego splits were so frequent and dramatic that all of our Ss noted them and commented on them spontaneously in their Journals. Supportive data is also available in the interviews.

4. Imagery

There is an abundance of data on imagery in the notebooks of all our Ss. For four of them (Ezra, Gwen, Naomi, and

Douglas) the imagery is visual, vivid, and highly idiosyncratic. A fifth S, Sabrina, complained at the beginning about lack of imagery; instead of imagery she found herself having cognitive activity. Kevin's imagery was more often auditory than visual. He heard streams and streams of words going through his mind and ideas that were expressed in words.

Frequently, visual imagery in a particular session starts as a geometrical shape or just some colors. But quickly and skillfully Ss transform such primitive imagery into highly complex and artistic productions.

Ezra did a careful introspective analysis of his own imagery in self-hypnosis which revealed that there are many different kinds of imagery in self-hypnosis. The visual imagery can be subdivided into five categories:

1. Imagery that seems to rise from somewhere inside the subject, then projects itself outside as if it were on a screen. This kind of imagery is always in color (at least for Ezra), and three-dimensional.
2. The more thought-like imagery, mixed with a lot of memories of events passed.
3. Bizarre complex psychedelic imagery. It was always experienced with closed eyes, but as if it was seen in the outside world.
4. Imagery that seemed to come from the outside reality and move into the subject.

5. More kinesthetic kinds of imagery. These were tied to a profound sense of movement, but also thoughts and other images were interspersed with the movement.

For all subjects imagery in self-hypnosis is highly idiosyncratic, much more so, they say, than imagery in hetero-hypnosis is.

5. Attention and Concentration

We have a great deal of data which shows that in self-hypnosis one must differentiate between free-floating attention, openness to becoming aware of mental events otherwise pcs. and ucs.; and concentration.

Attention in self-hypnosis is closely related to ego receptivity, while concentration is related to ego activity. In self-hypnosis attention wanders lightfootedly; for a moment it may attach itself to an image, then skip to a totally unrelated thought, then to a dream, a physiological process, etc.

Concentration, on the other hand, is an ego-active process. The S has to say to himself "concentrate now on this or that" in order to produce the effect. Concentration in self-hypnosis is hard work; attention is wandering like the lighthearted play of a child.

One of the main characteristics of self-hypnosis, we found, is the dynamic interplay between free-floating attention and concentration. Some of the ucs. or pcs. material that has drifted into awareness may prove so fascinating or interesting that the S does not wish to let it drift away again with the ongoing Stream of Consciousness. He decides to concentrate on it for awhile, and to engage attention actively in its exploration. This dynamic interplay of receptivity and active attention, my student and friend Dan Brown has termed 'exploratory attention'. He will further elaborate on the while subject of attention and concentration in his diachronic study.

6. Interpersonal Processes

One of the most important defining characteristics of hetero-hypnosis is the interpersonal relationship, especially its transference and role-playing dimensions. In self-hypnosis the S is alone; there is in reality no outside hypnotist. However, not infrequently, particularly in the beginning of experimenting with self-hypnosis, the S will imagine an outside hypnotist, sitting there with him hypnotizing him; particularly if the S has a strong transference relationship to a teacher or former hypnotist. As time goes on, and as the S becomes more skillful in auto-hypnosis, the desire for the outside hypnotist diminishes.

With regard to *Role-Playing*: *self-hypnosis does not lend itself at all to role-playing*. To whom do you play? To yourself? That does not work; because, as Kevin said, "You divide yourself, and one part is observing. That observing part knows whether you're role-playing or not. If you are, it knows that you have not succeeded to hypnotize yourself yet."

7. Similarities and Differences Between Self-hypnosis and Hetero-hypnosis

Similarities:

Both are Altered States of Consciousness, closer to each other than to any other Altered States of Consciousness.

Both are characterized by fading of the General Reality Orientation (GRO). There is much less reality-testing in both of them than in the waking state.

Both are characterized by Adaptive Regression in the sense of Ego Receptivity.

In both Dissociative Ego Splits occur.

Parameters of Important Differences Between Self-hypnosis and Hetero-hypnosis:

The difference between dissociative phenomena in self-hypnosis and in hetero-hypnosis seems to be the fact that in hetero-hypnosis the ego splits into two parts: the direct*ed* experiencer and the observer; plus in some cases a third one, the doubter; while in self-hypnosis it splits off another component: the direct*or*-hypnotist part.

Ego activity and ego receptivity: Self-hypnosis much more than hetero-hypnosis is characterized by a fluid changing back and forth between ego activity and ego receptivity.

Imagery: There is much more imagery, or much more awareness of one's own idiosyncratic imagery, in self-hypnosis than in hetero-hypnosis.

Wandering, free-floating exploratory attention is more characteristic of self-hypnosis; concentration is easier to achieve in hetero-hypnosis.

Role-playing in self-hypnosis is practically impossible; a fantasized transference relationship to an outside hypnotist is mostly non-existent.

Certain hypnotic tasks such as Hallucinations are easier to achieve in hetero-hypnosis than in self-hypnosis.

Discussion--Towards a Theory of Self-hypnosis

In the idiosynchronic analysis we have categorized a good number of phenomena (20) which appear in self-hypnosis. For the phenomena discussed so far the evidence was abundant. As the emphasis of this research is on its contribution to theory and hypothesis formation, rather than on measurement and hypothesis testing, the task before us now is to see whether the phenomena fit into one theoretical matrix.

They do. It is an ego psychological theory, with an emphasis on the fluid interplay between ego activity and ego receptivity.

This interplay is evident in the dissociative phenomena of the ego splits. So frequently one part of the ego takes over the active functions of giving directions while another part receptively listens and lets itself be led to execute them.

Imagery, attention, and concentration all are ego functions. We have pointed out the important role receptivity plays in letting imagery arise from within in self-hypnosis. "Playful openness" are the key words here.

It becomes exploratory attention in the dynamic interplay between the receptive mode of attention to the Stream of Consciousness and its counterpart, active concentration; which from time to time halts the flow of the stream it receptively looks at, in order actively to investigate its more fascinating facets.

Role-playing that one is in self-hypnosis when actually one is not yet is impossible, because the waking S's ego functions of critical self-observation and realistic judgment make such self-deception impossible. The self-observing part of the ego knows when the S is and when he is not in an Altered State of Consciousness, and it will not be fooled. If this holds so clearly for self-hypnosis, it also must have important implications for the theory of hetero-hypnosis and the whole question of hetero-hypnosis as role-playing or as an Altered State of Consciousness.

I shall stop here. If at the end of the Symposium we have time left, I shall discuss some of the implications for therapy.

Implications for Psychotherapy

¶ We believe that the playful self-exploration and the exploratory attention which are important characteristics of self-hypnosis could be used advantageously in hypnotherapy in a number of different ways. Whether only highly hypnotizable subjects who can easily learn self-hypnosis can use it, or whether less hypnotizable people can be taught self-hypnosis remains to be seen. Perhaps less hypnotizable people could learn to use self-hypnosis, if in the beginning an outside hypnotist would help them to learn to become aware of the stream of consciousness, of imagery that would otherwise remain out of awareness, and of the various ways in which attention, concentration, ego activity, and ego receptivity could be used. The outside hypnotist thus would act as a guide, and fulfill a function similar to that of the guide who initiates the inexperienced to the phenomena evoked by psychedelic drugs.

We believe that self-hypnosis can profitably be used for becoming aware of one's own ongoing inner processes that are usually out of awareness, that is what James called the stream of consciousness and what psychoanalysis calls the pcs. and ucs. processes. Self-hypnosis could be used for gaining control over and mastery of these processes. It could be used in attempts people make to work through their own problems. By helping people to learn how to become more ego receptive, we can perhaps induce them to

(a) worry less about anxiety, or about how things work, or about how to learn; and could promote more of a feeling of fun and playfulness.

(b) when patients become aware of the ego active modes

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of self-hypnosis they could learn to cope with frustrating internal and external experiences.

(c) they could learn to use exploratory attention, going back and forth between receptive attention, i.e. opening themselves up and becoming aware of their ucs. feelings, thoughts, and images and then swinging into the ego active modes, i.e. making a choice of what to study, to look at, and what not to in their own internal dynamics.

(d) the evocation of vivid imagery or allowing oneself to have a good deal of imagery in self-hypnosis can be a problem-solving activity.

(e) patients with somatic difficulties or psychosomatic problems by means of self-hypnosis could learn to become aware of their own physiological processes, and in this way perhaps at times forestall dangerous occurrences. For instance, if a person with cardiac trouble would become aware of minor changes in his heart functioning, while at the same time not feeling great anxiety about it, he might be able to forestall cardiac arrest and get himself to a hospital in plenty of time.

(f) by means of self-hypnotic hypermnesias and age regressions patients could explore their own life history, and dynamics.

(g) some point has to be made here about cognitive control, but I'm not sure what and how.

In sum, self-hypnosis can be used to help people become aware of their inner dynamics and gain better understanding and more control of their own behavior. And it does it by helping them to approach problems with greater receptivity, an opening of the mind, and greater playfulness.

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Adaptation and Cognitive Strategies in Self-Hypnosis: A Case Study

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The auto-hypnotic state (other than minor occurrences during intensive reading, studying, etc.) is an unfamiliar one to most people. How one experiences self-hypnosis (SH), to a much greater degree than hetero-hypnosis (HH), is an essentially personal event. The idiographic nature of the auto-hypnotic experience is revealed through the variety of methods that are chosen to enter the state; choice of goals; means of delivering instructions; reaction to accompanying phenomena; level of ability; and amount of integration of SH within the S's everyday life-style. These characteristics may be subsumed under the general heading of variance in individual adaptation and cognitive strategies.

The concepts of adaptation and cognitive strategies are especially important to keep in mind when dealing with SH. These concepts provide a useful framework within which to view individual S's responses to SH, as well as one from which to possibly derive generalized statements concerning the state. In SH, as opposed to HH, the S must take on the responsibility of completely constructing his experience. Such an endeavor initially involves entry into the trance state, and choice of tasks and the means by which to accomplish them. These decisions may be conscious or unconscious.

Throughout this paper, cognitive strategies will be understood to mean those deeply entrenched, personal concepts which provide a mental set towards the world at large. They are the central organization which provides the

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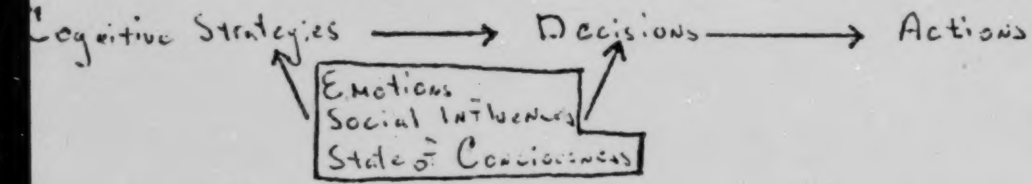
basis for choices and decisions which in turn lead to actions. Cognitive strategies and decisions are affected by social influences, the individuals state of consciousness and personal emotions. (See diagram)



Adaptation to the state is an important factor in the S's first few encounters with auto-hypnosis. The naive S, in terms of self-hypnotic experience, must meet the demands of entering a new and unfamiliar state. This hurlde of lack of familiarity, temporary disorientation, or possible sense of trepidation must be overcome; i.e., the auto-hypnotic state must be adapted to before the S may begin his experience in full.

Once the state is adapted to unforseen vistas are open to the S. However, apart from the particular phenomena inherent to the state (if any), the panorama is blank, left for each S to fill in, in his own personal style. Adaptation to the state may involve any number of sessions; research has not yet been done with sufficiently large populations for us to be able to generalize. This process of "filling-in" or creating one's own personal experiencing of the particular phenomena may be part of the adaptation process; just as when the S later attempts to attain a deeper auto-hypnotic trance or to achieve greater levels of ability, further adaptation may be necessary. The S's adaptation and cognitive strategies are not exclusive of each other. On the contrary, throughout the S's experience with SH the two significantly intermingle and thereby give individual shape to the S's experience.

SH, lacking the particular role-playing and interpersonal dimensions of HH, becomes a very personal experience. It should be rembered that in this study; the S was given no explicit structure by means of which he might better understand or somehow construct his experiences. The type of structure around which the individual S builds his experience, as it varies from the S's HH and ISH Inventory of Self-Hypnosis experiences, is therefore an excellent source of information concerning the S's cognitive strategies. As the S must direct as well as participate in and later interpret his experience, facets of the S's personality reveal themselves through his thoughts and actions. The judgments made by each S represent unconscious, involuntary, and conscious decisions and are an integral representation of the S's cognitive strategies. These judgments deal with the S's peculiar approach to SH. Furthermore, the actions which the S then takes in relation to SH - be they passive, as in the experiencing of phenomena or the perceiving of emotions, or on the other hand, active, as in the choosing of goals or particular excercises are the manifestations of the judgments previously derived on the basis of the S's cognitive strategies.

It seems to be an obvious consequence of the above to propose that the structure of SH allows for personality-dependent variation and that such variations are indices of the S's adaptive and more pervasive cognitive strategies. This is not asserted as the only means to gain data concerning S's personalities and their relation the S's experiences in an altered state of consciousness. On the contrary, a thorough reading of the S's journal would never give complete data concerning the S's experiences and modes of selection. This is so because the style of writing for individual S's may vary from being quite terse to rather verbose. However, an interview based on the S's journal would allow the terse S to give the experimenter more data and the verbose S to be more specific. However, such a detailed reading of the journal does give the student of a particularly personal state of consciousness such as SH the highly essential S-oriented base from which to better judge later personality test and phenomena correlations. Such a base is even more important if one is to study individual adaptive and cognitive strategies.

In a study of some duration, such as ours, one of the most propitious means by which to collect data is through the use of S's diaries. Diaries or journals, that is, self-report data, are an obviously rich source for material dealing with individual auto-hypnotic experience, and adaptive and cognitive strategies. Data of the type yielded by the S's journals - continuous descriptions of phenomena and self-appraisal - are essential to the understanding of an hypnotic state where there is no individual other than the S present and which the S himself induces every day for an extended period of time. The point of departure from one S to another must lie in the realm of different cognitive strategies and their particular methods of adaptation to SH; both of which are fully related through the Ss's journals. Since personal documents are inevitably ego-involved i.e., affected by the S's frame of mind and ways of thinking, they show the cognitive and affective context of behavior when dealing with the type of central organization in mental life (cognitive strategies) that produces individual peculiarities in the auto-hypnotic experience.

Diaries are for the most part introspective protocols. This is true whether their focus lies in the realm of outlining direct experiences or expressing emotions. Documents which relate the experiencing of phenomena and levels of consciousness are essential as the base from which to conceptualize about a particular state of consciousness. In a study such as ours, longitudinal documents allow the experimenter the possibility of watching the course of development and change in the S's personality. As has been mentioned, our findings are that S s reacted differently to the experiencing of phenomena at the start of the study than they did once adaptation to the state had been achieved.

The employment of adaptive and cognitive strategies, as related through Ss' journals, can be most adequately studied through the case-study method. After carefully examining the Ss' journals, one begins to have a sense for what the Ss were trying to do, (if not explicitly stated), why they were attempting to do it and the reason for their choice of method. No other means of data interpretation would allow the experimenter to truly comprehend what the S was doing during a month-long study. Certainly, cataloguing of phenomena and establishing correlations between phenomena and results of projective and objective personality tests are necessary for the understanding of SH and individual reactions to the state. However, the personal cognitive strategies brought to bear by each S upon his relation to the auto-hypnotic state over an extended period of time can best be understood through the very careful reading of the Ss' journals; i.e., through the analysis of the data as being peculiar to one individual. It must be remembered that the Ss used in our experiment were chosen for their deep hypnotizability and highly introspective nature and therefore offered large glimpses into their personalities through the examination of their journals.

This paper will explore in depth the diary of one S, Sabrina, and illustrate the abundance of material dealing with the relation of cognitive strategies to the S's own personal experiencing of SH that can be gleaned from a very careful reading and interpretation of the self-report data.

Occasional comparison of another S's experiencing with that of Sabrina should provide a more significant understanding of the effect of individual cognitive strategies on the S's experiences in SH and how such strategies may be found in self-report data. Such a comparison will also point to the benefit of experiments of long duration when working with the auto-hypnotic state because of each S's own continuum of change and particular reaction to the state's phenomena.

Sabrina is a young, black woman of superior intelligence and motivation. She is a graduate student at the University of Chicago and was a student in an advanced hypnosis class. As will be obvious later in the paper, she is not an overly verbose writer. This fact causes the author to attribute a great deal of importance to those feelings that she does see fit to make known.

The design of our experiment allowed the naive S the susceptibility test experiences as the only source for information concerning "what is expected of one" in SH. For Sabrina, her participation in the test experience and use of the Inventory of Self-Hypnosis was complemented by her training in the hypnosis class and served as the starting point for her experiences with SH. It must be remembered that Sabrina had very good knowledge of HH from her classroom training.

The detailed reading of Sabrina's journal was intentionally done without any knowledge of the results of the battery of objective and projective tests that each S was given prior to the onset of the experiment. Conclusions rest solely on the understanding derived from a careful examination of the S's journal.

The information brought forth in this next section, the interpretation of the journal data, will be of two types. Direct statements are the main source of data. Within this realm lie the S's expressed emotions, imagery used and statements concerning the occurrence of phenomena--what phenomena were experienced and whether the proposed goals were achieved. Interpretation is done solely on the basis of what is written in the journal. The author does not attribute feelings to the S but rather notes the tone of the passages and looks to later entries for direct confirmation of hypotheses. When the author points to what the S did or did not do, it is on the basis of direct statements. The questions of why certain things are felt and noted, or the contrary, as well as the S's choice of language, are the areas where interpretive measures are taken. However, no interpretive hypotheses dealing with the structure of the S's cognitive strategies will be posed without numerous implicit or explicit notations from the journal.

Sabrina relates in her journal that on day one, her first experience with SH other than the timer-version of the ISH, she felt that she was inside herself. Sabrina's method of induction was counting up a spiral staircase. Why the S did not choose the more conventional metaphor of induction, descending a staircase, will be made evident in a later journal entry. Keep in mind, however, that this S was very well versed in standard methods of heterohypnotic induction, but chose this rather unusual one. It is also significant that the ISH includes as one of its induction steps the use of step descending imagery.

The S states that the noise around her was bothersome to the extent that she had to stop up her ears to be able to concentrate enough to enter trance. The S states "I became very relaxed and quite suddenly I was inside." The S seems to have been disturbed by either the suddenness of her experience or by her conception of "inside" because she then relates that she did not remain "inside" but seemed to float in and out. On the other hand, this feeling might have been due to the novelty of the experience. Later entries in the S's journal will designate what the likely cause of her uncomfortable feeling was.

Towards the end of the first session, the S was able to reduce the sounds around her to the point where they became indistinguishable noises. Sabrina then plotted her objectives for her auto-hypnotic experience. "I decided that the things I would try (in SH) would be increasing my memory, being able to go into trance at will, and eliminate outer noise. Maybe some hallucinations."

The S's objectives are considerably control oriented. Her adaptation strategies seem to be those of an S who is entering a previously unknown state of consciousness with the thought of mastering it and putting it to her own use. That is, creating the type of situation which is very similar to that of the waking state. The S is attempting to limit her self-hypnotic experiences to the extent that she will be able to maintain control; as she does with her experiences in the waking state. The author means to point out that this S impresses him as one who establishes clear cut goals that may be of benefit later on and certainly necessary to the necessary adaptation to the present situation with which the S is confronted. Sabrina's half-hearted or uncertain desire to attempt hallucinatory phenomena, ("maybe some hallucinations") that is, an experience over which she will have little or no control, is indicative of that portion of her cognitive strategy which allows her to feel at ease or secure only when she is in a position of control. However, at the same time the S does seem to have the modicum of self-esteem that demands that she at least attempt to succeed in all of her desired goals.

The S's next auto-hypnotic experience did not occur until three days later. Sabrina states, "I forgot for two days. Perhaps due to the frustration of the initial experience." It now becomes obvious that the feeling of apprehension noted by the author in the material of the first day was in fact there. The S was so disquieted by her first experience that she "forgot" for two days. This author proposes that something about the auto-hypnotic experience does not seem to coincide with the S's established cognitive strategies. The notion of the S desiring mastery or control over her auto-hypnotic experience -- for Sabrina, a seemingly uncontrolable state--seems to fit as the reason for the feeling of frustration brought to bear by her upon SH.

It is interesting that in this journal entry, Sabrina once again mentions her difficulty in entering trance, and the need to eliminate noise through the stopping up of her ears. Most significantly, the S states that she is consciously trying to consider trance "as ascending, rather than descending or sleep." It is obviously for this stated reason that Sabrina uses the imagery of climbing stairs or a mountain. The metaphor used here in the S's induction technique leads the author to believe that the S does not use descent or sleep imagery in her induction because to her that implies a lack of control. One certainly does not have mastery over one's thoughts while sleeping, nor can one control the thoughts that arise if some of the barriers to the unconscious temporarily descend. The reader must once again keep in mind that Sabrina, being well trained in hetero-hypnosis, by a psychoanalytically oriented teacher, is aware of the fact that preconscious and unconscious material may come to the surface with the onset of a deep hetero-hypnotic trance, and might therefore associate this same phenomena to SH. However, in climbing up, in reaching the top of a mountain, one is, as it were, "on top of things." Such imagery gives rise to the notion of control or getting away from the thoughts that might occur if one descends the staircase.

It seems that the S feels the need to be master of her situation but at the same time is trying, for various reasons, to experience some of the phenomena o SH. The S's use of ascending imagery to induce trance with control is indicative of her adaptive and cognitive strategies that stress control. This is pointed out further when the S states that "At this point it is hard to tell whether this (using ascending imagery) will help or not because while I can end the trance at the predesignated time, I lose track of all time while in trance." It is interesting to note that the S never states what form the "help" will take; either in allowing for easier trance induction or more control. Perhaps this is just as ambiguous in the S's own mind or it may be either, because they both indicated mastery over the situation. The S can end the trance, i.e., has control over her experience, but loses all track of time while in trance, i.e., has partially or completely lost mastery over her experiencing of the phenomena.

The author believes that the S is conscious of her conflict of wanting to experience the state but at the same time desiring to maintain mastery of the situation. One might generalize that such a conflict would exist in an S with both a very curious mind and a desire for control of the situations which the S finds themself in as major facets of their cognitive strategies. Sabrina's cognitive strategies are also made clear by her choice of goals, which, if achieved, would allow the S to feel a sense of accomplishment in terms of self-hypnotic ability, gain self-esteem, but at the same time maintain sufficient control to feel at ease. The hypothesis just stated was derived from the first two days. If true, the proposition should be verifiable in further entries throughout the journal.

The S's third self-hypnotic session was very similar to the first two. The journal entry relates that induction is "still difficult" and that the imagery used is that of climbing a 150 step staircase. It is important that the timer version of the ISH, which the S had as her first experience with SH, included as part of its induction procedure the taking of 150 deep breaths which would help the S go deeper with each one. Sabrina has taken the amount to be used in her technique from the ISH but has changed the depth imagery to that of a rising staircase. Such an alteration of previously learned induction techniques lends support to the notion that for Sabrina, adaptation to SH is more a question of "rising above" the experience rather than immersion into it and attempting greater depth of trance.

The S states that "the basic problem, (in the use of climbing/counting imagery) however, is that I lose count. When that happens, it is hard to tell where I go but I soon return to counting again--like in and out. The whole process is frustrating....Perhaps because I expect too much too soon." The S implies that the particular technique fails because she cannot remain in control. The desire for mastery is once again seen as a major part of the S's adaptive strategies. The induction process becomes frustrating possibly for the above reason or because the S's expectations are too high. The author would venture to say that the S's impatience revolves around her feeling inadequate in terms of controlling her self-hypnotic experience at this point. Once again, the S's desire to succeed becomes evident. Sabrina is eager to become proficient in order to become master of her situation and then go on to achieve her established goals; all of which in turn imply further control. The S is in the position of knowing where she wants to go with SH, but is having trouble getting there. Once she gets there, it will all become easier, i.e., she will have achieved mastery.

On day 5, the S is beginning to experience greater ease in induction and feels more at home in the state. "Induction didn't take nearly as long ... It isn't as frustrating nor as difficult to do SH." The S really does seem to have begun to adapt to SH. Sabrina relates that at times she lapsed into thought centered as opposed to visual fantasy; has not yet had visual hallucinations; and that at times the surrounding noise seems to have diminished. The S is no longer as totally frustrated as she was two sessions back and has begun to take on a more easy going attitude toward accompanying phenomena. Sabrina's continued insistence on visual imagery is probably due to her training as a hypnotist and belief that all "good" subjects experience visual hallucinations, as well as her need to maintain self-esteem and succeed in her endeavors.

The S's new attitude is best indicated by the fact that she begins to raise questions to herself about SH and has become more mindful of her own thought processes. "I had been saying to myself -- at first -- that when I open my eyes, something will be there, or, sound will be gradually going away. However, it occurred to me, while in trance, that saying this perhaps increased the attention I paid to reality." The first four sessions were filled with apprehension and fear due to lack of control. At this point however, the S has acclamated herself sufficiently to the state, to have begun to explore it.

As a point of comparison, Ezra's early sessions seem to be rather distinct from those of Sabrina. Ezra is a very science-oriented, "experimenting" individual. From the first, he entered into the study with a desire to learn all he could about SH. The adaptive strategies which he used were much different from those by Sabrina. Ezra has had a great deal of previous experience with altered states of consciousness; including hetero-hypnosis, meditation, yoga, and hallucinogenic drug states. In a manner of speaking, Ezra was much better prepared to enter into an altered state with SH than was Sabrina. There was no fear or apprehension to be noted in his first journal entries as their was in Sabrina's. However, there did seem to be the need to create what may be called a "familiar atmosphere" in which the new state might be better accepted as fitting in with established cognitive strategies and therefore be more susceptible to empirical investigation. Ezra's journal is written in outline form, very methodical, with sections in each day's entry on the various aspects of SH which the S experienced and the numerous experiments which he attempted.

The journal entries for Ezra relate the fact that his adaptive strategies are to make the new auto-hypnotic experience very similar to his familiar meditation encounters. The S talks of "body-awareness", a "non-active ego state", giving self directions in the passive tense (as directions are given in many meditation texts), hallucinating a Tibetan wrathful dieity, and other rather obvious aspects of meditation procedure. The author does not believe that this adaptive strategy was prompted by fear on the S's part. It is just that this particular S feels most comfortable when thinking in these terms; i.e., this is the mental set which this S has brought to bear upon his experiences in SH; just as Sabrina seems to have brought the cognitive strategy of making SH similar to the waking state to bear upon her experiences. By feeling "more at home" in the new state, Ezra is better able to perceive the minute physiological and mental changes that may accompany the various self-hypnotic phenomena. The S's entire journal is composed of such perceptions. From his first experience with SH, Ezra has sought to explore the state and make note of his reactions and perceptions. The time lag between "feeling good" about the state and the onset of experimentation does not seem to exist; as it did in a most evident manner with Sabrina, who needed a number of experiences before she felt capable of attempting any type of experimentation.

The sixth session sketches the continued growth of Sabrina's ability and increased feeling of ease while in the state. The S's journal relates that induction took less time and that "instead of a staircase, I just imagined spirals." It seems that the S feels enough at ease in the state where induction imagery need no longer be of a solid, concrete and numbered nature; in more abstract, symbolic form, however, it continues to have ascending qualities. Sabrina can simply imagine spirals, and trance will begin. The S goes on to say that although she has temporarily given up on a visual hallucination, she seems to be gaining control of auditory effects. Sabrina partially releases control to enter the state, but is then able to put what was gained through the loss of control to use as a means for further adaptation to the state.

While in trance during this session, a new dimension is added to the S's experiencing of auto-hypnotic phenomena. "Whatever happens, it is quite strange. Not long after induction, I may be suggesting having a dream, etc., and I lapse into somewhere but what exactly is going on I'm not quite sure.

It is possible that I fell asleep." It is obvious that what is occurring is a more pronounced loss of the Generalized Reality Orientation (GRO) than the S was formally used to. That is, although adaptation has been partially accomplished, with the onset of different phenomena the S must again use her adaptive strategies to better understand the phenomenon and to shape a means of adapting to it. It is interesting to note that the S is neither overly frustrated nor worried over the appearance of this new, uncontrolable phenomenon. Let us see how long her patience lasts.

The journal entry for day 7 speaks of the greater ease of induction, boredom with staircases, and need to find an alternative method; perhaps the suggestion of relaxation accompanied by counting. An occurrence similar to the previous day's is also mentioned. "It happened again -- that is I lapsed into the state of deep dissociation with these things around me. I have noticed that I have little control when it happens and when I come out it's not quite like waking (sic) from sleep. My mind seems to race over many things like very intense concentration, only inside myself. Controlling this would be quite nice." The previous day's and this occurrence were indeed losses of the S's GRO. The S feels well adapted to the state but continues to express the desire for mastery; over the onset of this deeper state and over the thoughts that arise in it. The author perceives, that the cognitive strategies of the S, upon which her methods of adaptation are based, emphasize the controlling, as well as the achievement oriented aspects of her personality. Finally, the S parenthetically adds that her concentration ability in the waking state is increasing.

The entry for the eighth session is an extremely revealing one. The S's initial stage of adaptation is complete and the S finds that she can go into trance "almost immediately." That is to say, the S's goal of entering into trance at will has been achieved. Furthermore, Sabrina has begun to arrive at a new method of adaptation and control. "I have noticed that when I don't eliminate external things they are not disturbing." More will be said about this when discussing the following day's entry.

The loss of the S's GRO, or as the senior researcher believes the S's loss of reality awareness as well as of inner awareness, occurs again in this session. "This deep state -- if it is not sleep which I don't think it is --- is extremely frustrating. I have often tried to increase visual imagery, have a dream, etc., only to find that it is sometime later and I am coming out of trance ... But the content is difficult to put my finger on and the experience is very vague. I have the feeling that I have thought about a great deal, but that is hard to judge because time seems to have gone by quickly." The S has no control once she enters this "deep state." One of her fears is similar to that mentioned on the second day; apprehension over her loss of knowledge of time. The other, more important apprehension is one that the author perceived in the beginning of the journal but which the S did not state until this point; the fear of not being able to control and not knowing what thoughts arose during that period of time.

Earlier, the author spoke of the S's new choice of means for control. In the entry for day 9 Sabrina states, "I have started to rely more on continuous noises for induction." The S has gone from the position of being disturbed by the noises (days 1,2,4) to experiementing with them (days 5,6), to ignoring them (day 7) and finally, to now putting the noises to work for her. Sabrina was not able to block out the noises. However, to be able to manipulate them and use them is just as good, if not a better means to achieve mastery and in some sense even fulfills one of her goals. The S has been able to transfer the outer noise from a bothersome to a useful realm. The S's particular adaptive strategies allow her to change her approach to a problem when it is found to be insurmountable. That is, if a task may be more successfully achieved and self-esteem gained by a new plan of attack, then the S's adaptive strategies are flexible enough to allow this to occur. As will be noted throughout the journal, the notion of mastery through the manipulation of phenomena to one's own end is a rather significant portion of the S's cognitive strategies when dealing with SH.

Sabrina goes on to discuss what this author would like to term her "wrestling match" with hypnosis. "At this point (once into trance) I immediately start to concentrate at first on talking to myself, and gradually my mind begins to wander. This is so spontaneous that I have to catch myself if I want to concentrate on something in particular -- like getting rid of a headache. Then suddenly I lapse into a very deep state of inward concentration. It never fails, no matter what my other plans were." The S consciously wants to do one thing -- in this case to control the experience and put it to a medical use -- but neither has the ability nor, it seems, the unconscious desire to do so. It is as if the state were going in one direction and the S wanted to turn it around and lead it in another.

This day's final entry relates that the third objective had been accomplished. "In the waking state I have found that not only am I increasingly better able to attend, I think my memory is improving, and not just things

I read. I seem to rely less on notes (of an errand or of a reminding nature) that I have written to myself." Thus, Sabrina is successful and has achieved all of the goals set out in the beginning of the journal but for one; hallucinations while in an auto-hypnotic trance.

I believe that the entries of days 1-9 mark the end of the S's initial adaptation to SH and growth of ability while in trance. To summarize briefly, The S's cognitive strategy have manifested themselves in marked tendencies toward desiring a high level of control which seems to decrease with heightened familiarity to the auto-hypnotic state. Sabrina's adaptation strategies all involve gaining mastery of the situation in some form or another as was best demonstrated by her attitude towards SH and means of induction. In this next portion of the journal, the S takes on a slightly different attitude; based however, upon the same adaptive and cognitive strategies.

The journal entry for day 10 is relevant as an example of the S's continuation of her newly begun questioning or interpretation of the auto-hypnotic experience. Such interpretations could not have been done by the S until she had sufficiently adjusted herself to the state and its accompanying phenomena. During this session the S attempted to "identify if there are any physiological changes which occur", and describes how she knows that she is in a trance. "Basically it seems that the main way to determine whether I am in trance or not is by the feeling of relaxation. But there (are) also changes in my head, the feeling of intense concentration-energy."

The S's method of induction continues to make use of the imagery of rising above something --- perhaps the situation. "It was hard to relax, so I counted (to) 50 thinking at the same time about getting lighter." Once again the S, trained in standard hetero-hypnotic induction which involves sinking and depth imagery chooses to use the opposite. Need I again reiterate my belief in the overwhelming cognitive strategy of having to "be on top of things", in charge, in control, and successful, which shapes the S's choice of induction imagery and to a larger extent (as will be seen later) her whole attitude towards SH.

If the reader harkens back to the S's initial frustration over inability to achieve phenomena, the entry for the 12th session provides insight into the changes that occurred in the S's disposition toward SH. The entire entry consists of these sentences. "I tried an open eye trance but my eyes wouldn't stay open. I think that it would be possible if I tried it in less secluded places. The seclusion of the room, however, makes it difficult to do this." Is this the same S who "forgot" to induce SH for two days after her anxiety-producing first experience? In a sense it is not. The S now has a grasp for what SH means to her as an individual, realizes the limitations of her abilities and has overcome her fear of being overwhelmed by the experience enough to allow the experience to unfold in a manner much less inhibited by the desire for control.

In ego psychological terms, it would seem that the S has partially changed her strategy towards meeting the state. That is, rather than investing all of her energies in a one-shot approach to the complete production of phenomena, which would signal the S's absolute control of the state, the S will invest energies in thought about the state and its phenomena and she looks more toward the eventual gain of ability with which to produce the phenomena. In the beginning, the S wanted immediate gratification of that desire. The S realizes that this new found patience or willingness to "flow" with her experiences will allow her to eventually achieve her goal whereas her former attitude merely promoted mental anguish and no growth in ability. Primarily, due to the fear of being overwhelmed by the state her energies were attached to an attempt to fully control it. At this point, I perceive a change in energy cathexis. The S has become much more contemplative about her auto-hypnotic experience and with this new thoughtfulness there seems to emanate a more secure attitude towards her situation with respect to the state. It is as if the S is willing to substitute an understanding of the state which will eventually lead to mastery instead of her previous all out attempts which clearly were failures.

The entry for day 12 relates that the S is beginning to stabilize her new found approach to SH. Sabrina states "SH seems no longer distant but rather closer to me, not exactly a part of me, but not as far off as it was at first." From what has been said previously, one would surmise that the S feels more at home with SH because she feels more secure than she did earlier and has found a means of eventually mastering the state that seems to work. The S goes on to speak of her induction technique as being a "result of cues" - the low hum, (of her lamp and furnace) the word relax, - no longer the giving of specific instructions. The imagery with which the S explains her feelings is highly indicative of her continual desire to control what occurs; although it has diminished considerably. "It is then like me hypnotizing my best friend-me." During this session the S attempted to understand the time distortion and to have a dream about hypnosis; and neither insight nor a dream appeared. Her response to these failures is the voicing of the cognitive strategies that I believe to be behind most of her feelings and actions while in SH.

"Maybe if I can control the total hypnotic state I will be better able to utilize that energy for my conscious wishes." What better way to become master of a situation than to put it to one's own use?

On day 13 the S continues her experimenting, as it were, with SH. She attempts to induce trance in a new location, the library, but finds difficulty in excluding the noise. The S makes a physiological correlation to a specific hypnotic phenomenon when noting that visual imagery was more vivid when her eyes were rolled to the top of her eye sockets. Sabrina also "tried to work with categories of things -- like the time and other parts of reality." This entire session dealt with exploring the state and trying to understand it. The S attempted to make no concrete gains and enjoyed things more. Sabrina defines her experiences here as "quite relaxing and I was able to concentrate." The S has learned that for her, the slow path is a more fortuitous means to approach mastery.

Ezra's approach to SH is significantly different from Sabrina's by the mid-point of the study. Ezra's journal entries relate the fact that the S developed an inner world encompassed by his desire to experiment with SH. Much of the S's journal was written while the S was still in trance in order to discover how the waking state task of writing was affected by the S's being in an auto-hypnotic trance; phenomena such as positive and negative hallucinations were attempted for this same reason. It seems obvious that the cognitive strategies underlying the S's desire to extract as much information as possible from physiological, perceptual and mental viewpoints, while in an auto-hypnotic trance are totally different than those which form the base for Sabrina's choice of goals and induction techniques; all of which are to lead to her more complete mastery of the state and especially her situation while in the state. For Ezra, the waking state provides the base from which to draw comparisons with SH. The purpose behind entering trance is only to gain knowledge for this S. Sabrina, on the other hand, attempts to manipulate the state to the extent that it becomes a useful tool for waking state endeavors. The creation and examination of an inner world is neither desired nor attempted. Sabrina is satisfied with her accomplishments in SH only after she has placed SH "under her thumb" and is able to call upon it for necessary relaxation, medical purposes, or increased waking state concentration.

The next day's entry is the most interesting of all of Sabrina's journal for this author. The entry relates that she S is continuing to experiment, to try new things while hypnotized. Sabrina states,

> "I tried very hard to have a dream about hypnosis and none of the thoughts made sense, not consciously anyway. So in frustration I gave up. The next morning I realized that I had a dream, that I had a dream while in trance...the dream was quite vivid and real with bold colors. The thing I remember most was the fact that there were people with strange but not frightening faces."

The S attributes this dream to either wish-fulfillment or lingering of self-hypnotic trance. Either conclusion is possible, although the author believes that the notion of wish-fulfillment is most probably since the S has repeatedly shown the ability to end trance at the predesignated time by the use of suggestion, which decreases the probability of lingering trance. The S is entering "unknown territory" when desiring a dream during SH. The fascinating thing about the dream, and that which most struck the S, is the fact that the faces were "strange but not frightening." The author speculates that SH is no longer a frightening experience for the S, as indicated by the fact that she is attempting previously unproduced phenomena) and hardly as intimidating as it was at the onset of the study. If the S had this type of dream at the beginning of her auto-hypnotic experiences, these faces might have perhaps been strange _and_ frightening. However, to have a dream about hypnosis during trance would obviously be out of the realm of capable mastery. The S finds herself unable to have a dream while in trance because the state is so much under her conscious control. While the S is sleeping, when she has no choice in the matter, nor the ability to control it, she has her dream of dreaming while in trance. It seems that a certain distancing was necessary on the part of the S before she could produce the dream phenomenon. It is interesting to note that the S was able to produce a hetero-hypnotic dream in the Form C test, received a one out of a possible three points for dream production in the Form I test given before the onset of her self-hypnotic experience, and a full three points on the Form II test during the middle of her experience for production of a dream about hypnosis; notably, two days after she was unable to voluntarily produce just such a dream and the day after a spontaneous dream about SH arose while in trance. The S's cognitive strategies seem to be such that she cannot allow herself to fail in a task she has taken on. Either through obvious mastery, rationalization concerning the goal, alteration of her procedure to produce phenomena or in this case, through wish-fulfillment during sleep and in later hetero-hypnotic sessions, the S does achieve her end and therefore maintains a high level of self-esteem, which in turn seems to mitigate a sense of frustration.

The next session began with the S's attempt to remember the dream of the following evening. Instead she has a dream about hypnosis. The S states, "I recall specifically that I thought the whole time, in great detail. That was the most interesting thing." Unfortunately, Sabrina is somewhat secretive in her journal entries and does not discuss the content of her dreams as most other Ss did. The tone of elation that the author perceives in this entry is somewhat difficult to understand. Is the S joyful about the new found capacity to produce a "dream" about hypnosis, or perhaps over the fact that she believes herself capable of producing a "dream" while in trance and therefore boosts her self-esteem? At the same time, it seems that the S's "dream" involving "thought the whole time" is merely secondary process material that is entirely under her control. It is rather notable that in this session the S states that she has developed "more control over the state." This day's entry speaks of a dream, but one that seems highly susceptible to the S's control. These facts seem to be another good indication of what cognitive strategies are governing the S's actions. One fact is obvious, the S has gained quite a large amount of confidence concerning her abilities while in trance and has gained a great amount of control over her experience.

The entry for day 16 has abundant examples of the S's ever developing ability to control her experience; and her obvious delight with that capability for mastery. Sabrina states, "I didn't have a dream, but I find hypnosis quite useful in relaxing and organizing thoughts." The S's adaptive strategies are such that she minimizes the importance of any phenomenal occurrence over which she does not have mastery. We have seen Sabrina do this with her desire for hallucinations and now with the goal of an hypnotic dream about hypnosis. This seems to be one of the S's means by which to adapt to the state and continue her experimentation in it.

The S has always wanted to put SH to her own use and now she is beginning to have the capability to do so. The S's journal entry goes on to point out that one of her original goals has definitely been met and adds a new dimension to her attempted control of the state. Sabrina states, "Induction was the most frustrating. Now finding time in general is. Now all I do is say, 'Relax,' and I'm on my way." The ability to enter trance at will has definitely beeh achieved. The S speaks of the difficulty in finding time to do SH, whereas before she made the time. From the onset of the experiment, the S induced trance almost every single day. There were gaps over the weekends and one or two day lapses at other times but never before has the S mentioned the problem of finding time to do her SH. Perhaps this is another means by which the S can control her experience or limit it. The author believes this to be so. What better way to control something than to experience it only on your own terms? The S now believes herself capable of doing this. In fact, such a belief adds to the S's feeling of mastery over the state and her situation with respect to the state.

In the next day's entry, the S finds her doing SH to be in the way because of the proximity of exam time and her being more tired and therefore susceptible to falling asleep rather than entering trance. Explanation or rationalization? The S seems to be beginning to feel as if there is no use for SH unless it fits her schedule, meets her demands, and is useful to her own needs. In the S's final journal entry she states that she had only been giving 10-20 minutes daily in her experiences on most days. This is not only a further method of limiting the experience but also a rather small amount of time to be "interfering" with studies.

The entry for day 18 gives a great deal of information about the S. To begin with, Sabrina was able to use SH during this session to rid herself of a headache. SH is becoming a tool in the S's hands. Sabrina further states

> "I think I'll give up hallucinations for good. (She has made no mention of hallucinations since the entry for day 5 -- if the S had been thinking about it, she neglected to relate so in her journal.) I find it very difficult to fantasize reality in auto-hypnosis. I'm more keenly aware of trying to fool myself. This was one of the advantages of hetero-hypnosis. There was always the slightest possibility that the hypnotist was telling the truth."

It seems that a major cognitive strategy has just become visible. The notion of not being able to fool oneself is very important to this S. Sabrina does not believe herself able to "fake" things. Phenomena must actually occur, or her perception of the situation must be such that she believes herself to have succeeded, in one form or another, in her task; as with her second "dream" about hypnosis. Sabrina cannot fool herself, but if she has control of the situation there is obviously no need to even attempt to fool herself. This seems to be why the S drops the idea of having hallucinations in SH. The S would be entering a realm beyond her conscious control, with manifestations that she could not fake. If one does not attempt something, then there is no need to control it; which is in itself a means of mastery of the situation through strict limitations. However, in HH the S was able to produce negative and positive hallucinations. Sabrina attributes this to the possibility that the hypnotist is telling the truth. The author speculates that even more important is the fact that she can role-play and produce the required phenomena for the hypnotist without ever attempting to fool herself. Since the S would be very much aware of the fact that she were role-playing, there would be no anxiety. In other words, the S is still capable of maintaining complete mastery over the particular situation. With these particular cognitive strategies in mind -- those of desiring complete control but remaining truthful to herself -- one understands why the S has chosen the goals that she did and why the particular adaptive strategies were employed.

The entry for day 19 relates that the S has now achieved "perfect control" over SH. The S now uses SH under the strictest of limitations and only for task oriented purposes. She has lost her sense of curiosity and desire to explore. Sabrina states,

> "I am able to get relaxed, get rid of headaches, study, but I did do mind exploring -- I didn't really go anywhere. Maybe it's because I really don't want to. At this point hypnosis is very task oriented."

It is interesting to note that the S states that she possibly does not want to go anywhere with SH. Why? It is much easier to make a simple tool out of the experience than to allow oneself to possibly get ensnarled in an experience that is not controllable. For this S, the auto-hypnotic trance has run the gammut of being a novel, somewhat terrifying, and totally uncontrollable experience, to now becoming a highly controllable, very useful and task-oriented one.

Sabrina has found a niche in which to place SH; thus transforming a once frightening experience (the S's fear of loss of control) by minimizing its significance and making it a common, every-day event. In the entry for day 20 the S states,

> "Again today I used hypnosis as an aid to study, to concentrate. I've noticed that where I am really doesn't matter, I can still go into trance. Interestingly enough, it (SH) is coming to fit into the day somewhat like a daydream. Not that it is like a daydream but rather it is not an unusual thing to do during the day, or it didn't feel unusual....It has gotten so that it is typical for me to call on hypnosis for particular tasks."

The language which the S writes in is rather important. In this entry the S says that she "uses" SH. The cognitive strategies involved in Sabrina's desire to manipulate the state to the extent that the experience would become a useful tool were obvious from the first journal entry; there the S spoke of the goal of increasing her memory. The S's desire for control was also made known in her first day's entry and to a large extent has been implemented.

A summary of the author's beliefs concerning Ezra's SH experience are useful as a comparison to Sabrina's auto-hypnotic experience.

Ezra is a much more self-examining individual than Sabrina. He is very perceptive about slight nuances in his feelings and notes them down and interprets them. The S does the same with the numerous dreams that he suggests for himself to have. Sabrina, on the other hand, will write down that she had a dream, and leave it at that. She neither describes the details of the dream nor does she attempt to interpret it. She is however, to some extent, aware of the cognitive strategies behind her choice of induction techniques, reason for frustration and other particulars. She does make note of them during her interviews but not in her journal.

The cognitive strategies which determined how Ezra would "attack" the auto-hypnotic state are made evident by the style of writing used in his journal and the particular phenomena which he attempted to produce. The style of the journal is outline form, very descriptive and introspective. It is as if Ezra needs to experiment; to comprehend the state to his fullest capacity. The S seems to want to learn all that he can about SH but still rests what he perceives on a previously established base; meditation practices.

Throughout Ezra's journal, there are notions derived from his meditation experiences. The S often compares the physiological occurrences he is perceiving in SH to those that he has experienced while doing meditation. This raises the question of whether or not the S's perceptions concerning SH may be considered "accurate" or faulty. The S enters into the study with this "mind set", with which he feels very comfortable. But does this actually cloud his sensitivity to the SH phenomena during auto-hypnotic trance. This author thinks not. As the reader of the journal becomes aware of the S's own pre-conceptions, he can better judge whether the S's ideas have tainted what the S is perceiving. Certainly, this cannot be done in a preliminary study, such as ours. However, after a listing of the most often perceived phenomena is made and personality variables are catalogued, readers will be able to examine the S's self-report data and discover whether or not any pre-conceived notions effected the S's understanding of SH.

Let us now return to Sabrina. Sabrina had a dream during her session for day 21 and it is of the same format as the one she spoke of on day 14. Sabrina states, "...what do you know -- I had one of those dreams again, where I dream that I had a dream in hypnosis...The dream was quite vivid and not particularly related to hypnosis itself. It was pleasant and I could feel the colors." At this point, the S is able to have a pleasant dream about SH, without strange, intruding faces. The author speculates that she feels herself to have enough control over the state so that there are no demons involved, only pleasant colors. It is interesting that once again Sabrina mentions the fact that she had had a dream but does not relate its contents; still very secretive. It is also significant to note that despite the almost total control the S has over her experiencing of the auto-hypnotic state, she still feels the need to distance herself from her own experience by having a dream about having a dream while in trance.

The S's journal entry for day 23 relates her blasé feeling towards self-hypnotic phenomena. The S states, "nothing spectacular happened today; I just made a headache go away." If this had happened three weeks earlier the S would have been completely amazed. The language that the S uses here is significant. The fact that the S believes that "nothing spectacular happened" denotes that she has removed SH from the realm of an extraordinary experience and placed it among her common ones; which is in itself an excellent means of adaptation. The S goes on to state that, "I've also decided that what I said about fooling myself with hallucinations also holds true for motoric responses to some extent." The author can think of no better method to achieve full adaptation to the state and one's experiences while in the state than to continue whittling down the number of possible phenomena that will be attempted. Notably, the S always removes those phenomena which she feels least comfortable to experience in terms of continued inability to master them. Since the S "knows" that she cannot fool herself, she should certainly not even attempt these particular phenomena. Quite a successful rationalization.

The medical properties of SH are most evident in the next day's entry. Sabrina states, "I was really uptight today. I have been in the past but today was really bad. Once again SH to the rescue." The S takes on a very glib tone but it would seem is obviously pleased with her new found means of relaxation. This feeling of being more at home with the experience is also brought out when the S states that "no longer do I have to give instructions from my mind to my body...I just turn myself inward..." The SH experience has definitely been adapted to and has gone from a very complex and difficult accomplishment to a rather natural and easy one. The fact that "the surroundings can still come in" does not detract from the S's mastery of the situation. If the outside stimuli were said to continually force their way in or to bother the S while in trance, one could not assume mastery to be complete. However, if the S "lets" the outside stimuli enter into consciousness while in trance and is not bothered by them, she obviously has mastery of the situation through successful adaptation. The elimination of outer noise was one of the S's goals and is achieved in a round-about manner by her new "laissez faire" attitude towards outside stimuli of all kinds. This seems to be another example of the S rationalizing in order to maintain self-esteem and "achieve" her goal.

The S's final entry indicates how she has chosen to interpret the original experiment instructions of doing one hour of SH each day. As has been mentioned earlier, the S converted most of her sessions to 15-20 minute experiences. Sabrina states that "hypnosis is a good study aid." The S has found a use for SH. More importantly, she has chosen to develop SH as something to be used for the benefit of waking state tasks. Sabrina ends by stating that "...hypnosis has become for me a tool used when needed or wanted."

In conclusion, it should be evident by this point that there lies a wealth of information in self-report data. Certainly, in a preliminary study, such as ours, where various methodologies were used in an examination of SH, an important one is that of the case study method.

In the future, SH research must take cognizance of the fact that individuals experience and react to SH in highly different manners. This is evidenced by the very personalized adaptation strategies which Ss develop on the basis of their cognitive strategies. It would certainly be beneficial to do a study of rater inter-reliability when dealing with diachronic journals of SH experiences. After this has been done, a questionnaire can be constructed to be used in a large scale research program on phenomenal and experiential aspects of SH.

The time is right to continue research in the field of SH and the need is great.

Diachronic Methodology in the Study of Self-Hypnosis

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Large version of a paper to be read at the APA Convention in New Orleans, August 31, 1974, as part of the Symposium:

An Investigation of Self-Hypnosis from a Variety of Methodological Perspectives

Introduction

According to a methodological program first made explicit by the Swiss linguist, Saussure (1959), synchronic and diachronic analyses represent two completely autonomous and irreconcilable methodological options often leading to two very separate classes of results which, however, need not yield exclusive sets of conclusions.

The greater bulk of hetero-hypnosis research--research on hypnotic role behavior, hypnotic susceptibility, and even on the subjective aspects of the hypnotic state--all suggest a virtual monopoly of synchronic experimental design. There have been few notable studies following changes in certain aspects of hetero-hypnosis over the course of time. Largely, diachronic analysis has not been explicitly applied to hetero-hypnosis research.

An experimental design was constructed to test synchronic and diachronic methodological options simultaneously. The present study illustrates the way in which diachronic methodology is essential for understanding the experiential phenomena of self-hypnosis. Upon the collection and initial reading of journal data it became apparent that certain important changes in the subjective experience of SH occurred over time. No understanding of SH is complete without accounting for these changes. This paper is a preliminary exploration applying a more rigorous mode of analysis to the collected data in order to determine the exact nature of these changes.

The results of the diachronic and synchronic studies should be taken together as a "principle of complementarity" for understanding the nature of self-hypnosis. The experimental procedure has been reported in the previous synchronic study. Only the method used to interpret the collected data diachronically will be given in this presentation.

I. Analysis of Data

The taped interviews and journals were transcribed and independently analyzed by the senior author and four assistants. As the transcribed data are essentially 'texts', they are thereby subject to hermeneutic considerations. Hermeneutics is not a well-known word in contemporary psychology, even though one recent critic of psychology has tried to show that psychology's root metaphor is hermeneutic (Hudson, 1973). Contemporary psychology has no general theory of interpretation by which to standardize the handling of verbal reports. However, several diverse methodological options exist within psychology which rest on fundamental hermeneutic decisions, e.g., psychoanalytic projective interpretation, questionnaire evaluation, content analysis. Outside of these specialized stances, the greater bulk of experimental psychology handles verbal reporting in a hermeneutically naive manner. The authors are dissatisfied with the way verbal reports have been handled in most of the psychological literature. Seldom has there been an attempt to carefully delineate a theory of interpretation. In light of this gap, it is perhaps only possible at this stage in the growth of the discipline to carefully state the basic assumptions and step by step procedures by which the SH texts were interpreted even though lacking a wider theory of interpretation.

The purpose of this analysis was to develop a list of heuristic categories derived from the SH texts which would allow for initial generalizations about the SH experience. These generalizations are being drawn up into a lengthy and detailed questionnaire to be administered to a larger and more diverse population at a future date and to be tested by standard statistical procedures.

No attempt will be made at this time to determine the construct validity of the interpretations. In future research an attempt will be made to correlate journal interpretations, independent interview interpretations and questionnaire results. The categories were derived from ordering and classifying the data. An attempt was made wherever possible to name the interpretive categories after those found in a single coherent body of theory, name ego psychology. New categories were invented only when necessary. Since our aim was hypothesis generation, an attempt was made to collect the largest possible list of categories. After independent analysis, each E's list of categories was pooled with additions and modifications made to each list.

This pooled list of synchronic categories was then used in the diachronic study. Because the preformulated list of categories was used in the diachronic study not all categories were equally applicable. Categories were deleted where evidence was insufficient. An additional problem presented itself. Evidence was not available from all Ss for each of the applicable categories. Because journal writing was unstructured, Ss could write on whatever interested them. Under these conditions we would not expect data from all Ss for each item analysed. In each case given in the results, the number of Ss, out of a total of five Ss, is stated for which data is available. As the aim is hypothesis generation, it is recognized that extensive and detailed diachronic data, which is given by only one S for a certain aspect of SH, can sometimes be more useful than data from several Ss.

Data was handled in the following steps. The preformulated categories were used as "diachronic facts" (Saussure, 1959). A diachronic fact is an isolated unit of analysis, i.e., one analysed independent of all other units. The diachronic facts used in the analysis were: initial reaction to SH; induction strategies; trance depth; attention and concentration; imagery; subjectively experienced physiological processes; spontaneous age regression; reality constructions; cognitive organization of SH behavior. In each case the journal giving the most detailed description of a certain diachronic fact was used as a paradigm. Then, the other journals were read with the specific intention of collecting all the data pertaining to same subject. Next, an attempt was made to evaluate the extent to which data from the other Ss tended to support or to vary from the original paradigm. Finally, then each journal was reread with the intention of finding evidence contrary to the hypothesis in question.

Careful consideration is given to the nature of available evidence. So as to diminish the issue of demand inherent in our data, a decision was made to use primarily the journals. Interview data was used only as supportive to an hypothesis generated solely from journal data.

Within the journal data three types of evidence were considered relevant to diachronic analysis: 1) direct statements made by each S as to changes over time in the SH experience. These statements are taken primarily from the journal and are backed up by interview material. 2) Units of journal data present in the first two-week experimental session, but absent in the last two weeks, or vice versa. 3) Units of journal data showing a transformation over time. These last two types of evidence presuppose a theory of interpretation and are thereby more questionable than the direct statement evidence. The three types of evidence were not given the same weighting. A wealth of direct statement evidence was available for all five Ss. Only this direct type of evidence was used to set up a paradigmatic diachronic fact in the formulation of an hypothesis. The indirect evidence was used only as supportive data and in many instances was not included in the write up. In those cases where the latter types of evidence are used, they will be marked in the paper. The heavy weighting given to direct statement data is intended to make the case for a diachronic analysis stand on more solid ground.

To give one example of the above procedure, Kevin makes several direct statements in his journal that his ability to concentrate during SH changed with greater SH experience. Our list of preformulated categories made us attentive to selecting this statement from the journal. Next, the journal was scored for the reference to concentration. An attempt was made to study these references linearly making note of the days that each was recorded. A progression was sought, in this case a progression to more profound concentration over time. We only wished to determine the overall direction of the progression and the degree of difference between initial and final experience of the given diachronic fact, e.g., concentration. Whether there was an even progression to greater concentration or whether there were single days in which concentration lapsed was not considered important in light of the overall trend. Next, a similar procedure was carried out independently for the other journals. As Kevin gave the most numerous and detailed directly stated entries on concentration his journal data was used as a paradigm of the concentrative changes in SH. Finally, the independent data from other journals was compared to Kevin's data on concentration, and modifications were made in the paradigm. A generalized hypothesis across all Ss concerning concentrative changes in SH was suggested. This was followed by a short discussion of the theoretical implications of the research findings in light of an ego psychoanalytic theory of attention. A similar procedure was followed for each diachronic fact. Only after independent analysis of each diachronic fact was completed a comprehensive theory of self-hypnosis is presented.

The usual format of data presentation is meant to be consistent with Saussure's prescription for diachronic research. His methodological rigor demands that each diachronic fact be studied in isolation from the other facts without attempting to interrelate them. Likewise, each of the analysed facts is presented as a separate section with an independent discussion section.

II. Results

1. Adaptation: Initial Reaction to the SH State; Loss of Control and Adaptation

An important source of diachronic data is a comparison of S's affective reaction and also the interpretation of SH at the beginning and end of the SH experience. The difference was found for all five Ss. Despite the intensive HH training, four of the five Ss' initial experiences with SH tended to have negative aspects. These Ss expressed anxiety, frustration, or an inability to perform in a manner expected from the HH and ISH training. Only one S, Naomi, reported a positive initial reaction. Her experience was dominated by "sense of exploration." For two other Ss the experience was upsetting enough that discussion of it was dominant theme in first taped interview. These reactions appear to be different from the training experience with the ISH because no negative reactions were recorded in the space for subjective evaluation attached to the ISH scoring sheet. Although the exact nature of the difference calls for further study we might tentatively interpret the reaction in terms of disorientation and loss of control.

Data are available on the nature of the reaction for the four Ss. Negative Affect was the dominant complaint. Three Ss experienced frustration. The frustration was related to inability to correctly respond to self-suggestions on account of certain cognitive changes relative to waking state occurring *in SH*. Sabrina's reaction was the most dramatic. Disorientation was so great on the first day that the room began to spin around and she got a headache. The fifth day she reports:

> Induction is still difficult. I first tell myself to relax. Then I suggest a winding staircase going up. At the same time counting each stair I decided to try 150. The basic problem, however, is that I lose count. When that happens it's hard to tell where I go but I soon return to counting again--like in and out. The whole induction process is frustrating. I have tried to do visual things, imagery, hallucinations, but these seem only to increase the frustration. Perhaps because I expect too much too soon.

Here the frustration are from *attentional diffusion*. For Kevin it arose from a blocked response to the desired number of expected suggestions. On the first day Kevin states, "...many thoughts drifting through my mind, couldn't always concentrate." For Gwen, floods of visual imagery interfered carrying out the suggestions.

> "...the visual imagery began to interfere with my train of thought. There were waves flowing in front of me. I became frustrated and stopped the hypnosis for a short while; perhaps half an hour. I then resumed it, determined that I would be able to maintain complete concentration this time."

Ezra's affective response was quite different, although less explicit. The only affective associations directly stated in the first few sessions were several references to "surprise." However upon ending the first session Ezra reports a dream expressing his reaction to SH that day. The dream expresses a deep *free-floating anxiety*. In the dream he is floating in a rubber raft on a vast ocean with the apprehension that something may come up out of the ocean.

Certain cognitive alterations were common to the first SH sessions for several Ss. All four Ss complained of difficulty maintaining concentration. For contrast, it should be noted that no such complaints were heard in the HH, ISH training sessions as indicated by the recorded subjective responses given in the standardized scoring forms. Nor were they found in the later experimental sessions with SH. A shift to more primary process thinking was marked in all five Ss. The three Ss who experienced frustration, also related primary process thought to the loss of concentrative ability along with the concomitant frustration of self-suggestions. Cognitive changes included an increase in criticality for two Ss. In the first session Ezra reports, "I am not so quick to respond as in the Form I [training session], takes longer to do them, more critical skeptical attitude." Kevin's first few SH sessions were conflictual as he became more critical of his own role-playing as a component of SH hypnosis.

Three Ss reported what shall be interpreted as a difficulty bringing about the changes in reality testing necessary for trance. Sabrina had difficulty blocking out external sounds so that her trance induction was problematic. Gwen, had difficulty closing her eyes in the initial SH sessions. Ezra had difficulty entering trance unless he developed elaborate dissociation techniques allowing certain parts to be more hypnotized than others. In light of the reported affect there is some reason to suspect that those various responses indicate defensive maintenance of contact with external reality, however ambivalent.

Equal to these dramatic initial reactions is their apparent absence after the first week of SH. There is no direct evidence for similar negative reactions to the state given by any S after the first days. As Sabrina's initial reaction was the most severe, it is in her data that the contrast is also most pronounced. In place of frustration she experienced a "spontaneous relaxation" and an "exploratory attitude" in the later sessions. She had no more difficulty maintaining concentration. The SH state of consciousness became less alient and more continuous with normal functioning. Sabrina states:

> "Well, when I thought at first about altered states, I thought about something that was very unique from the normal functioning...And now it's like...it's still altered; it's not like walking around and what not, but it's more a part of the way your conscious and unconscious go together during a normal day."

In an interview Sabrina explained these changes as a process of adaptation to the experience:

> "...it became easier to adapt. After your expectations become crystallized, it becomes easier to adapt because you know wha' kinds of processes you have to go through in order to deal with that particular thing."

Similar direct statement data, though less explicitly are available for the other Ss.

Discussion

Even with data collected from so few Ss it is clear that

Ss demonstrate an initial disorientation to the SH state. This factor is difficult to understand in light of the previous experience and training of our Ss with HH standard scales and the ISH. The question as to why such a reaction occurs must remain open. It may, of course, simply relate to the experimental design. Ss were given minimal instructions and were not told anything about SH. In the experimental sessions, no hypnotist was present to define the situation and structure the tasks. Termination of any hypnotic transference that was part of the training sessions with the onset of the SH sessions could be another factor contributing to the negative effect.

A diachronic methodological stance is useful in disclosing the contrast between this initial disorientation and later SH behavior. Drawing from the S's own conceptualizations, the concept of *adaptation to a specific state of consciousness* is a plausible hypothesis. The author views a state of consciousness as a total re-organization of ego functioning. Certain physiological or psychological manipulations cause an alteration in specific ego functions, e.g., attention, cognition, affect, memory, perception, reality maintenance. The change in one or several ego functions results in a new configuration of total psychological functioning. This is subjectively experienced as a qualitative shift in conscious experience. In light of such a theory, we would expect that some experience with the self-hypnotic state would be necessary by means of which the S adapts *to the altered functioning.* This hypothesis allows connections between our SH data and data collected for other states of consciousness. Noteworthy is the data for LSD induced states where in the struggle to adapt to the drug-induced state is more pronounced. A corollary to this hypothesis would be that different states of consciousness require different adaptations within the limits of personality-determined adaptive styles.

These data suggest that the disorientation is largely determined by cognitive factors. An experimental design not providing Ss with sufficient cognitive orientation to the experience contributed to the struggle for control. The shift away from secondary process thinking, coupled with enhanced criticality, made it difficult yet for some Ss to find a cognitive orientation to the SH state. In this light it is highly significant that Ss experienced less disorientation as they constructed a set of expected SH behavior for themselves.

Several implications exist. Whatever explanation further inquiry may yield, it must account for the difference in initial reaction between the ISH and the SH experimental sessions. The question of personality differences and response to ISH also arises. These data suggest relationships between experienced frustration and more goal-oriented personalities. There is no evidence to rule out the hypothesis of reaction types, i.e., a correlation of certain adaptive styles to certain personality factors.

2a. Adaptation: Changes in Induction Strategies

A second source of data on adaptive changes during the SH experiences are data on changes in the process of induction over time. The evidence for these changes are: comments on the difficulty or ease of induction; length of time needed to induce a functional level of SH; changes in the types of suggestions used to induce the SH state. A distinct increased ease of induction was noted for all five Ss within the first two weeks of SH experience.

Direct statements on the ease of induction over time as compared to initial SH experiences were found in the journals of all five Ss. The specific induction strategies, e.g., arm levitation are done with greater ease. For example, on the first day of the second two-week session Ezra again comments, "Doing an induction by my arm levitation, I find that it is much easier than it was a few weeks ago." Not only can changes be detected in specific induction strategies, but the entire process of entering trance, irrespective of induction method, is easier. The comments by Ezra on the fourth day of the experiment can be taken as typical: "induction: upon signal, immediate trance. I am impressed with how easy it is to go into an immediate trance. As soon as I am in trance the imagery begins." (underlining by S)

More fruitful to look for changes is a detailed analysis of the induction strategies of one subject. Kevin made a careful distinction in his journal between suggestions for entering trance and suggestions for deepening trance. Of the former category three types are used at different phases of his SH practice. He begins with a time-consuming fixation on an exterior object, switches to breath-counting on the third day and finally to arm levitation toward the end of the first two-week session. These shifts in induction strategies are no less than a shift to progressively faster modes of induction. Even the final choice of arm levitation is seen to get easier over time. During the second two-week session he states, "Rising hand to go under. Very easy." At one point he returns to breath-counting; rather than, say, thirty breaths, it took only three breaths to attain the proper trance. This fragment of evidence in which Kevin reintroduces an earlier induction strategy with a marked change in its effectiveness is important. The generalized ease of induction can be concluded in a reverse manner; Rather than looking for shifts to easier induction strategies, the disappearance of difficult induction strategies is an equally reliable source of evidence. A fantasied hypnotise, an elaborate dissociative phenomena were used extensively by Ezra in the first week of SH. There are no further journal entries on these after the first week. Instead, Ezra has developed an automatic signal for entering trance.

More convincing is evidence that Ss advance to the point of no longer needing verbal self-suggestions in order to enter SH. Ezra invented an auditory signal that when uttered he would immediately enter the appropriate depth of trance. "I have given myself a signal (in sound). Upon saying it and closing my eyes, I can immediately go into trance, experience REM's and see very visual imagery." Sabrina's journal reveals the same shift to easier, shorted induction strategies, in this case a shift from the slower process of counting up a staircase to the simple suggestion of relaxation. More important, there are fewer induction strategies recorded in the later part of the journal. In an interview she explains that trance came spontaneously without the need for formal induction with verbal self-suggestion. "So after awhile it got to the point where I decided that I would go into a hypnotic state, and so I was in the hypnotic state." (without verbalizing any suggestions) "I don't have to do anything other than decide that I want to go into trance." Data on spontaneous trance without formal induction is available for one other S, Gwen:

> "This was the first experience I've had while being run as a subject for this experiment that I haven't said to myself, 'Now you're going to do hypnosis.' This time, it was merely a spontaneous trance..."

These data suggest the possibility of a spontaneous trance when a S has the proper expectancy of trance and enters an appropriate setting: An example is taken from Gwen: "I sat in my dining room staring at the bright reds and yellows in our oriental carpet. I immediately felt a trance overtake." A very similar example is given by Sabrina. As she sits down in her room to begin SH: "My body almost immediately responds to thinking about going into trance--my head drops, my eyes close, my arms unstiffen." In both cases, there is no use of verbal induction strategies.

2b. Adaptation: Changes in Suggestion Styles

An analysis of the self-suggestions given after the S has entered trance is consistent with the findings from the analysis of induction strategies. Again, in this case, there is evidence indicating less use of formal verbal suggestions during trance for all five Ss. Commenting on how she gave herself suggestions, Sabrina called it a "dialogue" with herself, i.e., verbally letting herself to relax and then answering by relaxing. She notes two changes in the nature of this dialogue over time. First, "The dialogue became shorter." Sabrina knew what hypnotic response she wanted from herself and used less suggestive words to evoke theresponse. Second, the dialogue becomes more internalized and less verbal. "The whole thing is internal, I don't verbalize."

Naomi, whose suggestions predominately were to stimulate fantasy and dream productions, demonstrated a trend toward more spontaneous less verbally suggested fantasy, I finally got to the point where I just had the fantasy or the dream or the experience without the verbal accompaniment." Imagery is often used as a substitute for verbal suggestion.

For Sabrina a form of "inner speech" was substituted for systematic verbal suggestion over time. She speaks of a vague 'thought-like' dialogue that is never verbalized or even fully conscious. It was only necessary for her to hear certain cue words in this dialogue in order to respond: "Somewhere I know exactly what I'm talking about even if I don't spell it out, so that certain words would be cues." Evidence for a similar turn to inner speech is found in Ezra's data. Rather than responding to certain key words in this internal suggestive program, Ezra intuitively grasped its entire structure:

> "I don't always speak. I don't vocalize things. It again comes about in a flash. A thought will pass through my mind, a cool thought about what I'm going to do. It will contain the whole program at once, so I don't vocalize all of the parts. It's not like I say to myself, 'Well, it will come about that my arm will rise, it will stay up here for a while.' I run by all the parts in a momentary flash, and that whole program part by part will be in it. I don't have to sub-vocalize anything that comes out. I just grasp it intuitively, holistically."

In both cases, the Ss clearly show reliance on an abbreviated dialogue showing many similarities to what Vygotsky has called "inner speech" (Vygotsky, 1962).

Sabrina's data suggest that at times toward the end of her SH sessions she may have attained a degree of spontaniety (in responding to suggestions) so that even inner speech was no longer necessary. That is, self-hypnosis became spontaneous action without formal suggestion. She explains this as a breakdown in the experiential mind-body split. She no longer had to think about a self-hypnotic action before it could happen; now it could just happen. Supportive evidence is clear for two other Ss, Gwen and Ezra. For example, Gwen says, "I never thought about that...it wasn't like I say." "O.K., are you really able to do this?" "I just did it." (underlining mine)

The decrease in formal verbal suggestion over time goes hand in hand with the greater immediacy of self-hypnotic response. There is less concern with getting specific suggestions to work and a greater exploration of the results of these suggestions. The first line of evidence to yield this conclusion comes from an analysis of changes in specific suggestive strategies for each subject. For three Ss there was a decrease over time in the variety of suggestions recorded for each journal day, and the tendency to focus on specific suggestions with personal interest. For example, Ezra records 6 and 7 different suggestive tasks on the first two days of the experiment. During the entire last two weeks his suggestive tasks are limited to variations on three areas of special personal interest--imagery, awareness of physiological events, and rapid entry into deep trance. Similarly, Sabrina focused on studying for exams and Kevin on attaining deep levels of trance during the final two-week session.

A second source of evidence comes from a comparison of the content of the journals for the first and second two-week sessions. There is a greater emphasis on strategies for entering trance in the first sessions and less so in the latter sessions. Conversely, there is more time devoted to an exploration of the trance state during the latter sessions and less time to entering trance.

A third line of evidence is a change in attitude toward the specific suggestions themselves. It may be recalled that the ability to enter a hypnotic role is an important dimension of hypnosis (Shor, 1962). As all Ss were given an extensive HH training period, each S was versed in his own hypnotic role performance. With extended SH experience two Ss reported a dissatisfaction with their own role behavior. They complained that quickness to respond to the hypnotic role implied by a given hetero-hypnotic suggestion prevented their taking time to fully experience the suggestion. The change in attitude with greater SH experience was precisely the expressed desire to *take more time to fully experience a suggestion*. Ezra's second session journal remarks are explicit:

> "Particularly in SH and not in HH if I allow myself the time to totally feel something before I respond, that is if I don't get into the role--if I don't fully feel it, if I wait until I fully feel the suggestion, it is more meaningful and I think I do it better and do it with greater depth."

Supportive evidence was clear for only one other S, Kevin.

Discussion: Automatization

From an analysis of direct statement and more indirect analysis of changes in suggestive strategy a good amount of data is available to support the hypotheses of *automatization of the self-hypnotic suggestion over time*. Increased exercise of a particular psychic function is said to result in an automatization in which the activity is carried out with most of its steps disappearing from consciousness. Less energy is expended and the originally automatized function is able to undergo a change in function so as to serve more diverse ends (Hartmann, 1958, p. 88). Rapaport sees the process of automatization in terms of the formation of stable psychic structures, in which attention cathexis is freed toward other ends (Rapaport, 1967: 605, 784-5).

The increased occurrence over time of automatic and non-verbal inductions and the occurrence of spontaneous trances is suggestive of increased automatization. The shift to internalized, holistically organized self-suggestions beyond the range of full consciousness is consistent with Hartmann's point about the decreased conscious awareness with automatization. If automatization of suggestion occurred one would expect much less concern with given and following self-suggestions and a greater spontaneous exploration of the self-hypnotic state. That attention was freed to other ends is supported by an analysis of the journals for the final two-week session. As one S put it, learning self-hypnosis is like learning to ride a bicycle. Once you learn it you never forget it.

The issues of automatization raises the related issue of *development of specific skills within self-hypnosis*. With the shift in attention [of] cathexis the S is able to act spontaneously within the state and to explore the various behavioral and experiential dimensions available to the state. The manner in which Ss use this freed attentional cathexis to explore the state according to personality-specific interests leads to the development of highly individual skills such as Sabrina's claimed improvement in study habits, Kevin's ability to enter deep trance, Ezra's improved awareness of imagery and metabolic control, and Naomi's capacity for insightful adaptive regression.

Automatization of SH appears to bear some relationship to a sense of self-mastery. Sabrina speaks of greater contol over the state and the ability to carry out suggestions to improve study habits in a free and relaxed manner. Kevin remarks on a "feeling of accomplishment and pride" when a particularly difficult suggestion worked. In comparing her SH experience to a drug experience Naomi comments:

> "I think that a very important part of SH is knowing you can do it, knowing it's almost a normal, natural capacity. And otherwise you blame it on the substance (drug) and it lacks some of the sense of mastery in that part of participation."

This development of a natural capacity through the automatization of suggestions and free exploration of the state is another dimension of the concept of adaptation to a given state of consciousness.

3. Trance Depth

The study of changes in trance depth over time is complicated by the fact that the word 'trance' takes on several different meanings in the journals. Generally, the usages of the word 'trance' cluster into two main categories. The first is the subjective experience of greater depth, i.e., an intense feeling of involvement in the immediate self-hypnotic experience relative to lesser periods of involvement in SH, while blocking out extraneous mental events. The second usage has to do with lapses in the awareness of external stimuli during SH. These two definitions of trance depth are by no means exclusive. Rather, they represent a difference in emphasis, namely, whether trance depth is to be defined relative to previous levels of experience within SH as standard, or whether it is to be defined relative to external reality as a standard.

Diachronic data on the subjective experience of depth is most clear in Kevin's journal. As one of Kevin's motivations for doing SH was to learn deep levels of trance, there are a great number of journal entries on depth. These references demonstrate a definite trend toward increased subjective depth over time. On the second day Kevin complains that he lost the depth of his trance and was unable to go deeper no matter what he tried. Thus, he begins with an inability to maintain deep levels of trance. By the fifth day he was able to attain considerable depth. "I believe the deepest I've gone yet. I got very good images of going deeper in to a void of some kind." Next, he resorts to several self-suggestive methods that help him attain a deep trance quickly, namely a counting technique and fractionation. Not only does Kevin learn how to induce deep levels of trance, he next learns how to maintain them. On the seventh day, he records that as he felt himself shifting to a lighter level of trance he was immediately able to correct this and to go deeper again. Also, by this time, he has surpassed the need for a deepening technique such as counting. He "can now go deeper by merely saying 'go deeper'." By the ninth day he recalls, "Go under very deep, very quick." There is also another important journal entry for that day, "My immediate depth is relatively deep compared to earlier." For the remainder of the SH experiment Kevin continued to increase his depth by choosing more and more difficult self-suggested tasks that would require greater depth in order to carry them out successfully.

Gwen, likewise, defines depth in terms of a subjective feeling of involvement while in SH. As she used the Tart self-reporting scales (Tart, 1970), her journal data is especially valuable in that she gives a quantitative account of her subjective experience of trance depth for each day of SH of the entire four-week experiment. Trance depth shows no increase over time, and even a slight decrease. Thus, the trend is exactly opposite to that found in Kevin's data.

Sabrina defines depth in relation to a diminished responsiveness to external stimuli. In the first days of the experiment she complains of an inability to concentrate on account of outside noises. Thus, it was very difficult for her to go into trance. She had to stop up her ears in order to enter trance. By the end of the first week she is able to enter a "state of deep disconnection" from external stimuli. This does not mean an unawareness of external stimuli. She is still aware of outside stimuli but they are no longer bothersome:

> "I have noticed that I don't eliminate external things they are not disturbing. I can also respond to an interruption or ignore it."

Sabrina is still aware of outside stimuli but there is a diminished responsiveness to them:

> "When I started going into trance, it would be like an invisible shield around me, which didn't block anything, but it didn't let as much go out."

Sabrina's journal illustrates a more diminished responsiveness to external stimuli over time, i.e., deeper trance levels over time. However, at several points, she tried self-hypnosis in a new environment. Within each new setting it was difficult at first to exclude external stimuli. An adaptive process had to take place through which she could attain deeper levels of trance.

Ezra's journal is valuable in that it contains both usages of the word 'depth'. At times, depth is taken to mean a subjective feeling of greater involvement relative to earlier self-hypnotic experiences. As for Kevin, Ezra's data on subjective depth shows an increase over time. On the fourth day, he records the first self-hypnotic experience of "profound depth." The first day of the second two-week session contains the entry

"I can go a lot deeper now than I could when I first started doing this." However, despite this increased subjective depth Ezra also complains that it was difficult to block awareness of external stimuli throughout the entire four weeks. Although there were times when he was "completely unaware of the reality" there were other times when it was "very difficult to become unaware of them" (external stimuli). *Fluctuation* in the awareness of external stimuli was predominate and *showed no change over time*. Ezra developed special concentrative techniques to help block out reality. As these techniques were developed towards the end of the final two week session, to that extent only Ezra was *able to block out reality to a greater extent over time*. The difference over time in subjective depth and depth seen as reality fading in Ezra's journal implies that the two meanings for 'depth' involve quite different but related processes.

Discussion

It must be born in mind that the depth spoken of in the journals is an introspected depth. Introspective and objectivist methodologies are completely different systems of analysis and often yield very different conclusions. Thus, it is not surprising that the great increases in subjectively reported depth fail to correlate positively with the objective measures of depth. That is, all Ss again were given the SPS Form I upon the completion of the four weeks of SH. There were no increases in total scores on the Form I comparable to the increases in subjective depth reported for the SH experience. This finding by no means invalidates the conclusions concerning subjective depth. Rather, it shows the methodological error of expecting such correlations from autonomous methodologies.

It must also be remembered that depth changes were not found for all Ss. No marked change was found in Gwen's data. This was also the only quantified data. Several factors seem to effect the reporting of depth. Motivation may be an important factor. The difference between Gwen's and Kevin's data may suggest that a specific expectation to increase depth is a necessary factor in its success. Whether Ss are more internally or externally oriented during SH also seems to effect the nature of the reported depth, i.e., whether depth is reported as subjective involvement or reality fading. Other factors may play a role. Kevin relates depth to the development of concentrative skill. Ezra sees profound depth related to greater passivity while in SH. At present the issue of depth seems to be a mixture of many factors which cannot easily be separated. However, a few very tentative hypotheses will be made.

These data suggest that trance 'depth' may mean very different things to different Ss. There is some evidence to believe that subjective depth and depth as reality fading are related but different processes. A theoretical construct needs to be postulated to integrate these two processes. Shor's concept of a "generalized reality orientation" can be used for these two definitions of 'depth' (Shor, 1962). Shor defines trance primarily as "the fading of the generalized reality-orientation (GRO) into non-functional unawareness." Our data from Sabrina and Ezra lend support to Shor's theory. There is also a second aspect to Shor's concept of trance. Unfortunately it is not given adequate emphasis.

As a result of GRO fading Shor speaks of a "temporary orientation to a small range of preoccupations." These "special orientations" function in isolated from the generalized reality orientation and become the total reality of the S during their performance. Shor's concept of "special orientations" is useful in understanding our SH data. The "special orientations" correspond to the greater subjective involvement, subjective depth, for our Ss. Thus without any major modifications, Shor's theory of hetero-hypnotic trance can account for our varied SH data on trance depth. The only difference is that our SH data gives much greater emphasis to the development "special orientations" than is the case for hetero-hypnosis.

Shor's theory does not help to account for the increases over time in trance depth reported by some of our Ss. We would postulate from out diachronic data that the fading of the GRO and the development of special orientations increases over time in SH. To explain this increase a second theoretical construct is suggested. The key concept is 'attention'. With a reduction in the GRO an amount of attention that is bound to external reality and used in reality testing and maintenance is freed. The greater amount of attention freed from externality correlates with the depth of trance. When this freed attention is turned inward the depth is defined subjectively as a greater involvement in internal processes. When this freed attention is redirected outward depth is defined as an awareness that reality has faded. Both definitions of 'depth' are integrated around the concept of attention cathexis. With the exception of Gwen, the unleasing of attention cathexis from externality increased over time.

The fading GRO releases attention cathexis from externality. Automatization of the SH state releases attention cathexis from responding to suggestions. Both processes combined release enormous amounts of attention for exploration of an internal environment. *Both an exposition of this internal environment and a delineation of the attentional modes of SH are central in understanding SH.*

4. *Attention/Concentration*

In SH *attention* may wander off to follow fleeting thoughts or spontaneously arising imagery. This wandering attention is a dimension of SH much more than in HH where the hypnotist's repetitive suggestions keep the S's attention fixed in defined ways. Most of our SH Ss defined concentration as the negation of this wandering attentional mode so characteristic of the attention as revealed by the synchronic study. Thus, '*concentration*' was used in the journals of the Ss to mean the ability to hold the attention to carry out one task and not let it wander aimlessly. Diachronic data for freely wandering attention and concentration in SH cannot easily be separated from each other.

Sufficient data were available from four Ss to demonstrate a *clear increased ability to concentrate during SH over time*. The greatest number of journal entries on concentration are found in Kevin's journal. He begins the first day with the entry, "many thoughts drifting through my mind, couldn't always concentrate." The second day is not different, "Thousands of ideas and images run through my mind, but I couldn't keep to one, nor really build on it." On the fourth day, the very first signs of increased concentration appear, "my mind would go off on a little excursion and come back a little later." On the sixth day, Kevin is able to effect a negative hallucination by 'concentrating'. The following day, he induces trance by arm levitation, commenting, "concentration on hand tremendous." Towards the end of the first two-week session there are several clear statements on improved concentration in the journal. For example, he writes, "General observation. My concentration ability is very, very good and seems to be getting better." At one point he speaks of a task completed by "very hard concentration." The capacity for effective concentration, and thereby less attentional wandering from a self-suggestion, is learned by Kevin through a definite progression.

Ample supportive data is available from three other Ss. Likewise, Sabrina's first journal entries begin with complaints that she couldn't concentrate enough. During induction by counting she loses track of the count. By the eighth day, she first speaks of effective concentration. Towards the end of the two weeks she describes a phase of SH as "a feeling of intense concentration." By the fourth week she is using SH to 'increase concentration' while studying for exams.

Likewise, Gwen complained of an initial difficulty concentrating. Already by the second day she says, "I'm finding already that my power of concentration (at least for today) has improved. It was easier to focus on one object or thought for an extended period of time."

By the fourth day, Ezra comments, "It is getting easier to concentrate." During the second two-week sessions he develops a "very, very intensive concentration" to carry out certain suggestions. However, in the final interview Ezra says that he is a poor concentrator and that concentration did not change at all in the entire four weeks. He complains that he mind still continued to wander off.

Ezra's journal and interview statements may not be contradictory. It must be recalled that all four Ss initially viewed concentration as the negation of a wandering attention.

Diachronic evidence for attention is not so readily available as the evidence for concentration. Both Kevin and Ezra enter complaints in the second half of their journals that there were still periods when their minds persisted to wander off. Data are available for all five Ss indicating an increased play with spontaneously arising imagery. From these very scant sources, I would hazard the guess that the wandering attentional mode characreristic of SH does not undergo a change over time. The contradiction in Ezra's data may be seen as such a recognition, namely, with increased SH experience a S can allow his attention to freely wander or he may draw it back to concentrate intently on a given self-suggestion.

Discussion

The evidence on attention and concentration reveals a fundamental difference between the synchronic and diachronic studies. A wandering attentional mode was more characteristic of SH and HH as revealed in the synchronic study. With some exceptions, the amount of concentration necessary to carry out a given suggestion was greater in HH with the help of the hypnotist. Profound concentration was usually reported as more difficult in SH. The diachronic study has revealed that concentration can be increased with SH experience. Thus where the synchronic study sees SH primarily as a mode of wandering attention, the diachronic study sees SH primarily as a state of deep concentration. These differences are largely a difference in methodological perspective. However, they do reveal that both methodological perspectives are necessary if accurate conclusions are to be drawn as to the nature of SH.

Viewing SH as exploratory attention and as deep concentration is not necessarily contradictory. An experienced S in SH may use both modes. There may be periods of free attentional play wherein spontaneous thoughts and imagery are experiences. Some of these thought associations and images may be more interesting than others so that attention may be more focussed on them in order to follow their transformations. After following these thoughts, concentration may be relaxed back to free exploration again. Both the free exploration and the following of specific mental events through their transformations will be called the exploratory mode of attention of SH. Finally, the free play of attention may bring to mind certain self-suggestions, e.g., a dream, an age regression, an hallucination, that may be carried out by switching to a profound concentration during SH. After carrying out the suggestion a S may again return to an exploratory attention mode. Both exploratory attention and SH concentration appear to be effected by the interests and mood of the S.

These hypotheses especially need verification. It is the author's belief that a proper understanding of the specificity of attention in SH is a key both to understanding the other phenomena of SH and also in differentiating SH from HH and other ASCs such as meditation. Upon automatization of SH, attention cathexis is freed for ends other than induction and suggestion. In its exploratory mode this attention can be used in SH for a greater awareness of an internal environment, for an investigation of thought moments, imagery and subjectively experienced physiological processes (of part 5).

The term exploratory attention has been used purposefully to distinguish SH from meditative phenomena. The author believes that SH is to be distinguished from mediatation primarily in its characteristic mode of attention. For example, two attentional modes are given in many classical meditative systems. Mindfulness is a detached awareness of all mental moments without responding to them by focusing attention and following their transformations. One-pointed concentration is a profound concentration on a single object in which all other thoughts are excluded. The exploratory attentional mode in SH is not so extreme as meditative mindfulness, nor is SH concentration as extreme as meditative one-pointed concentration. Thus, although these distinctions are highly speculative, I would expect that a detailed analysis of the attentional modes in SH would support the hypothesis that SH is different from meditation and HH in important ways.

5. Internal Environment I: Imagery

Data are available for three of the five Ss on an *increased awareness of imagery over time*. The journal of a fourth S, Naomi, is almost entirely composed of recordings of hypnotic dreams and imagery. Although there are no direct statements indicating increased utilization of imagery in Naomi's journal, it is possible to detect changes in the imagery experience over time for Naomi's data, namely an enhanced regressive participation in the imagery experience. Little data was available from Kevin as imagery was not an important preoccupation of his SH experience.

Changes in the capacity to experience imagery came quite fast for Ezra. On the second day his journal enters, "I was surprised how easy I get *very* vivid imagery after only two days." The very fast increase in Ezra's imagery is not surprising as he stated quite clearly that a prime motivation for becoming a subject was to learn to experience vivid imagery. For Gwen and Sabrina, whose interest in developing imagery were not quite so explicit, an increased awareness of imagery was reported by the end of the first two-week session. Of the ability to experience hypnotic dream-like fantasies Sabrina says, "And it would be extremely vivid then. Colors, you know, and it happened more often, like it happened toward the end of the first two weeks, but it happened even more" [afterwards]. Of particular interest is Sabrina's comment that imagery happened "*more often*" by the end of the first two weeks.

All four Ss recorded in their journals certain changes in the quality of the imagery over time: Imagery was reported as more vivid for three Ss. Greater detail of the imagery was an imporgant factor for Gwen, although no direct statement supportive data is available from other Ss. At the end of two weeks Gwen says, "A big extension of imagery, and I don't know, maybe the next two weeks will really help me out in defining it more. I'm able to see things a lot more clearly now. I would say, in general, more detail, especially in my age regression. That's really amazing to me." Imagizing more in color was reported by Gwen and Naomi. Imagery became more eidetic-like for Ezra. He says in the final interview:

> "Imagery is easier to get, but to get something that's really out there that you can see go by, that's hard to do. That's also in color. While your internal imagery isn't, but the eidetic seems to be in color for me... umm...I really have to concentrate and work hard to get eidetic imagery."

His first reporting of eidetic imagery was in the second week of SH experiment.

More active engagement of the imagery was a factor for three Ss. Rather than detachedly 'watching' the imagery it was experienced with greater affect. Gwen felt as if she was in the imagized scene:

> "...much more vivid colors now...umm...along with the colors, too, I am getting a greater feeling, like the actual feeling of it. Like when I saw...when it started off and I saw like a blue color and then it turned into waves, and then I got the movement of the waves in my body along with that."

Naomi felt sad when the imagized scene suggested sadness and felt light if the imagized scene were clouds or balloons. Noteworthy is the distinct *increased sense of participation* in the imagery. Rather than 'watching' a scene one S became part of the scene without a sense of separateness from it. As Naomi's journal is predominately an account of her imagery, the sense of participation is most marked in her data. Imagery became a *kind of reality* in itself. She says, "It is much easier to watch fantasy with sensation now, as though it merges as a reality rather than an image in my head." Ezra would use his skill in eidetic imagery to project different humanoid forms and then carry on an *active dialogue* with them. Gwen, and also Naomi, demonstrated an increased age regression along with their imagery experience. The increased sense of participation was a regressed participation.

The *spontaneous experience of imagery* was more pronounced over time relative to the suggested imagery in the first SH experiences. Also, three Ss reported spontaneous imagery in association with entering trance during the final two-week session. This finding should be seen in the context of the data on the automatization of trance induction over time. It is hypothesized that trance automatization frees attention cathexis for other ends, in this case, resulting in a greater awareness of imagery upon entering trance.

The ability to make *subtle distinctions between different* kinds of imagery was discovered by one S. Ezra noted two kinds of imagery on the tenth day and later added a third:

> "The other thing that I did today was to become particularly aware of the imagery that I do and to notice that there are many things called imagery. I think I'm at the stage of SH now where I can become a little bit more precise on the varieties of imagistic experience. On the one end of the pole there seem to be images that are very much internalized and almost close to subvocalizations--these are mixtures of primary and secondary processes and they usually have to do with things that I'm thinking about...just day residue kind of things and a lot of memories that come up with it. Then there are the complex psychedelic kinds of images which are usually pictorial or presented in form and they are usually objects with many many different things growing in different directions and also some transformations...There is a third class which seems to be out there as if I'm watching the screen...And these, unlike my other images, are in very vivid color, and usually they're very distinct forms."

These data are reasonably suggestive that the experience of imagery changes over time both quantitatively and qualitatively. The exact nature of these changes apppears to be highly individualized in our data, few changes were directly reported for all five Ss. That is, reporting seemed to be a function of their interest in certain aspects of the imagery experience. For example, if a S reported change in the color of imagery only, it doesn't necessarily imply that a change in the detail of imagery failed to occur. It only means that a S failed to write anything about detail in his journal. More data might be added if Ss were pressed in the interviews or if indirect modes of analysis be used for the journal data on imagery. At this stage it appears better to list only the direct statement data in hypothesis form so that they can be subject to verification later. The hypothesis is that quantitative and qualitative occur in the experience of imagery over time.

Discussion

The diachronic data on imagery invites a re-interpretation of our previous synchronic data on SH imagery. The fact that there is more reporting of idiosyncratic imagery in SH than in HH may not be sufficient. Our present Ss remind us that we need much greater precision on the quality and types of imagery and in distinguishing the nature of the interaction between the S and his imagery, whether it be detached watching to affective participation. More careful research into the relationship of imagery and specific personality factors is called for.

The present data suggests a process of learning is involved in the awareness of imagery. Several interesting questions are raised. Can Ss with poor imagery capacity learn to experience rich imagery with SH? As all our Ss were excellent imagizers no data is available to answer this question. Is the learning of imaging affected by motivation? Ezra's data is suggestive. His motivation to experience imagery in profound ways is the clearest of all the Ss; he also reported the most dramatic changes in imagery awareness over the course of the four weeks. It would also be useful to know how the capacity for adaptive regression relates to learning imagery awareness. As Ezra's adaptive regression scores on the Holt Rorschach were highest his imagery awareness is predictable. Need Ss a certain level of adaptive regression before learning to deepen imagery awareness is possible?

For highly hypnotizable Ss with a significant capacity for adaptive regression the possibility of learning to 'deepen' the imagery experience is supported by the data of the four Ss. Self-hypnotic practice over time may result in a more sensational detailed imagery with a certain reality quality of its own. This imagery may be experienced with more affective participation.

Internal Environment II: Awareness of Physiological Processes

Imagery is only one such instance of an awareness of an internal environment resulting when attention is freed upon automatization of SH trance. Another important application of this attention is toward subjectively felt physiological processes. All five Ss stated a greater awareness of their own physiological processes over time. So far as can be told, this awareness was only slight for three Ss, but was profound for two Ss. Not only were Sabrina and Ezra better able to articulate their awareness of certain physiological processes but were able to perceive their interrelationship to self-reported trance levels and also the cognitive interpretation of the SH experience.

Ezra reported "being more acutely aware or mindful to internal processes such as imagery, such as muscle tones and movement of muscles, such as the action of my digestive tract, my breathing--things like that." Although all the Ss commented on awareness and control of breathing this was not included in the results. As the Ss may have been familiar with hypnotic inductions using the breath such comments were dismissed as part of the mental set. However, spontaneous reporting of other physiological processes were given more credence: Awareness of fine muscle tremor (Ezra); manipulation of pulse (Kevin); increased sensitivity to changes in body temperature (Gwen). Most interesting, at one point Kevin claimed that he "could actually feel stomach wall, slimy with ridges, with pool of ugly liquid at bottom." Naomi reported being able to enter her body to relax it. Similarly, she describes the stomach as an example. Just how much these data suggest an increasing sensitivity to physiological cues is difficult to evaluate.

Two Ss discovered a relationship between physiological change and experiential trance level. They used certain physiological manipulations to induce particular states. After the SH state Sabrina "tried to identify if there are any physiological changes which occur." She concluded: "I knew exactly what kinds of body reactions I would be having in hypnosis and by that way. I could tell whether I was actually going into it." From that point she used physiological manipulation as a pathway to hypnosis. Among others a general "feeling of relaxation" was a favorite strategy. Ezra concentrated on the diaphragm:

> "There seems to be some sort of physiological correlate between relaxing my diaphragm more and more and going deeper and deeper into trance. So I tried this a few times purposely relaxing my diaphragm when I do this I seem to feel like I'm sinking, going, down, down, and things like that."

Ezra also practised rolling up the eyes as a disorientation accompanied by imagining himself sinking. The effects of these techniques, so far as can be determined, go beyond any specific hetero-hypnotic technique that focuses on physiological processes. They seem to point to an increased utilization of internal control to produce certain trance effects.

Two Ss were able to grasp unusual relationships between different psycho-physiological factors. As Ezra states, "One of the great things that came out of the last two weeks was a tremendous awareness of physiological mechanisms and how they interplay with the cognitive." Ezra used awareness of fine muscle tremor as a measure of his subjectively experienced arousal level at different points in a trance state:

> "One of the things that has been just tremendously useful has been to become mindful of the fine muscle tremor--it's always present--the very fine muscle tones that you can tune into after a while and depending on the extent of the muscle tones you can almost gauge how fast or slow your metabolism is going."

Ezra also perceived an interrelationship between different arousal levels and different types of imagery:

> "I found this interrelationship between...umm...different metabolic levels and imagery function. Like, for example, where if I was...it was really in a high energy state, my imagery would really be rapid-fire kind of imagery, one thing after another...And then when it was going slower, I'd get like one thing thrown up and it would stay for awhile."

Along the same line, Ezra and Sabrina commented that subtle shifts in eye position during trance consistently correlated with different imagery types.

> "There are differences; they are subtle, but there are differences...If I roll them all the way up like that, there's a white haze unfolding. It usually takes a few seconds. Vivid, very vivid colors."

Whether these introspective correlations would withstand psychophysiological measurement remains to be seen; these examples are only meant to accent the greater sensitivity to internal processes.

Discussion

These findings generate several hypotheses for further study. (1) Increased experience with SH over time appears to carry with it a greater awareness of physiological processes. These range from obvious processes such as pulse and breathing to subtle processes such as activity of internal organs, and from the simple to highly complex interrelationships between these processes. Methodologically, a diachronic study appears to yield awareness of an internal physiological environment whereas synchronic study even with excellent Ss failed to reveal this. (2) The question of voluntary control of these internal processes appears to arise concurrently with their awareness for some Ss. (3) Physiological awareness appears to be greater in some Ss than in others, although this fact could easily be an experimental artifact, i.e., it is possible that some experiences were not reported. (4) Increased familiarity with physiological processes for exceptionally sensitive Ss may begin to break down the cultural tradition of a mind-body dichotomy as the S experiences these physiological processes as physiological events:

> "I'm trying to figure it out...you know, it's the mind-body thing. I think they're not as separate as they were initially. And in that sense I'm more conscious of my body reactions. Before I think I would think of hypnosis: that before it could happen physically, it had to happen mentally...whereas later it was...it could be either way...they were less separated."

(5) Methodologically, the interrelation of introspected physiology and instrumental psycho-physiological measurement remains problematic: Eastern yogic systems have developed separate language domains of "gross and subtle physiologies" to stress the exclusiveness of these domains of data.

A mechanism can be hypothesized for the change in imagery and the awareness of physiological processes. The automatization of the SH experience frees attention cathexis for other ends. One such end appears to be a greater awareness of the imagizing process. Another is awareness of physiological process. This automatization hypothesis is supported by the fact that ease of trance induction and greater imagery and physiological awareness parallel each other in the journals. Greater attention is available not only for becoming more aware of imagery and physiological processes but also for making subtle distinctions within the imagery experience as to the quality and kind of imagery, and also for grasping subtle connections between physiological processes. The results of these attentional changes can be summarized as the construction of an internal environment.

6. Spontaneous Age Regression and Dreaming

Evidence for unsuggested age regression is clear for four of the five Ss. It is not our purpose to distinguish between hyperamnesia, subjectively experienced age regression and genuine functional age regression. It is only possible to note definite trends toward some concept of age regression on the part of each S. All Ss were familiar with age regression from previous hetero-hypnotic experiences. A few tried to repeat these experiences in SH with varying degrees of success or failure. The reports of age regression we have in mind here are of a different sort. They are entirely spontaneous and demonstrate an intensification over the course of the four week experiment.

Spontaneous age regression was most striking for Gwen. There are a total of nine detailed accounts of spontaneous age regression in her four-week journal. These follow a distinct diachronic development. There are no account of age regression until the sixth day of her experience. However, Gwen experimented quite a bit with self-suggested dreaming in those first days. The dreams themselves show more regressive content over time. The first day's dream is fairly typical of the earliest dream reports: "I dreamt about floating away on a cloud: a very relaxing and breezy feeling set in." (entire dream report) After a few days the dream reports are more detailed and the manifest content of the dream deals with an earlier time in the S's life. On day four, this college student surprises herself by dreaming about her junior high school librarian:

> "Finally, I dreamt about standing in front of a big department store window. A man (in the window) was bent over a chair like he was picking something up. When he stood up, I was shocked to realize that this was the face (and I saw the features perfectly) of my junior high school librarian who I haven't thought about in years...I stared at him for a piercing moment as he did at me, and then I just walked away."

On the sixth day the first real spontaneous age regression was reported. The S had not given herself any suggestion for age regression. It occurred during a period of trance in which she "let her mind wander":

> "I suddenly was age 5 and was in my bedroom in New York. The most amazing thing was that I could remember perfectly what the room looked like: with pink walls, wooden floors, white bedspreads and these hugh windows covered with large pink and white flowered drapes. My sister, brother and I were playing 'blind man's bluff' and the entire traverse rod on the drape fell off. We were all really petrified to tell Dad. Since Don and Denice wouldn't, I went downstairs to take the blame for them. As it turned out, my Dad wasn't mad at all and laughed off the incident."

She claims that the entire experience took fifty minutes clock-time while she "actually relived" the experience. Also, the experience was later 'verified' with her parents' recollection of the same event. Later age regressions contain more convincing markers of a credulous regression, e.g., egocentric playing, preoccupation with large dimensions of surroundings and body smallness, attention to more immediate objects of interest. There is also a progressive increase in the number of spontaneous age regressions for each week of journal recording: 1, 2, 3, 3 respectively. In short, there is a definite trend toward age regression both quantitatively and qualitatively over time.

Data from Naomi's and Ezra's journals are supportive of this finding. Naomi, likewise experimented considerably with dreams on the first days of the experiment. The first regressive dream occurred on the fifth day wherein Naomi experienced a "nightmare" awakening with tears calling, "Mommy, mommy." She then regressed to early years experiencing "fright, helplessness, and being left." The first non-dream spontaneous age regression came on day seven. Several others followed in the next weeks of SH experience. Ezra experienced a suggested age regression first on day seven. Several spontaneous age regressions followed during the next weeks. In no cases did spontaneous age regression occur on the early days of the experiment, implying that some adaptation to the SH experience was a prerequisite.

There are no cases of spontaneous age regression or even more regressive dream and imagery content for Sabrina. There is one case of spontaneous age regression for Kevin. It is difficult to interpret these exceptions. Their value lies in cautioning against making the generalization that spontaneous age regression is a necessary aspect of the adaptive changes in SH.

The data from Sabrina and Kevin, though lacking in age regressions, are rich in hypnotic dream material. In both cases, there is a distinct increase in the number of recorded spontaneous hypnotic dreams over time, a greater ease in self-suggested dreaming, and richer content in both cases. Sabrina's complaint was a distinct lack of imagery in her earliest SH sessions. By the fifth day she was able to first experience thought-like fantasies, but no visualizations. Visual imagery was reported first on the twelfth day, but was not vivid. On the following day Sabrina developed a method to get more vivid imagery. On the fourteenth day she had a dream about hypnosis. "The dream was quite vivid and real with bold colors." A number of similar hypnotic dreams were recorded in the second half of the journal. The progression from no imagery, through thought-like fantasy to vivid dream-like fantasy is quite clear in Sabrina's journal.

Kevin's dream data are an interesting parallel to Sabrina. Kevin's first attempt to have an hypnotic dream was on the second day. Like Sabrina's initial attempts with imagery, the self-suggested dream largely fails, as he couldn't really tell if he was dreaming or not. However, by the next day, Kevin is able to recall part of a self-suggested dream and says, "I seem to be progression." By the tenth day vivid hypnotic dreams with full recall are "easy to do now."

Discussion

A reasonable generalization that can be made from both the data on spontaneous age regression for three Ss and the data on hypnotic dreams for the other two Ss is that adaptive regression is involved in both cases. The hypothesis worthy of further testing is that all five Ss demonstrate an increased capacity for adaptive regression over time. Whether the experience takes the form of more instances of spontaneous age regression or of allowing more primary process material into consciousness some general theoretical construct such as adaptive regression is needed to integrate these findings.

There is no way of knowing why adaptive regression is seen more as spontaneous age regression in some journals and as greater awareness of primary process in other journals. The interview data clearly rules out the possibility that these differences are simply differences in personal interest in age regression vs. imagery. The author would expect to seek an account of these differences within the individual defensive structures. Holt Rorschach scores for each S have yet to be correlated to the above data.

The possible significance of these findings, if they can be verified, is that adaptive regressive is not fixed but can change over time. It is not possible to know whether this represents an actual increase in the capacity for adaptive regression or an adaptation to the SH experience so that a fixed individual capacity for adaptive regression can be approximated more fully. That some Ss seem to demonstrate an increased adaptive regression faster than others in the journal also needs explanation.

7. Reality Construction

With extensive practice in an altered state such as self-hypnosis there is some evidence that self-hypnotic experience gradually becomes a normal reality in itself. *The initial qualitative differences between the self-hypnotic state and the waking state collapse*. It is no longer an 'altered state' but simply a 'state' to be experienced in itself. As Sabrina says in the final interview:

> I wonder if it's not quite the altered state that it was initially...when I thought at first about altered states I thought about something that was very unique from the normal functioning. And now it's like...it's still altered; it's not like walking around and what not, but it's more a part of the way your conscious and unconscious go together during the normal day.

Functioning within self-hypnosis became so natural for Ezra that he *could only tell if he was in trance upon its termination* and subsequent comparison to the waking state again. He says, "The interesting thing about that is how you can only tell you're in trance by coming back out." Ezra's *imagery became invested with reality qualities*:

> Also the imagery is very vivid. I am left with an 'aura' after awakening because the imagery world is getting so real. I am beginning to confront the ancient dilemma of Chwaings Tse and his butterfly dream: Am I dreaming of a butterfly or is the butterfly dreaming of a me?

In both Sabrina's and Ezra's journals there are initial signs of diminished reality testing and the subsequent *construction of a state-specific or psychic reality*.

There is also some interesting data in which Ss compare the self-hypnotic reality to waking reality by opening their eyes while in self-hypnosis. Both Sabrina and Ezra claim that external reality "feels different."

> The reality still looks like reality, but it feels different when you're in a trance state. To test that I tried some open-eye things and the room looked a little bit different like being slightly out of phase with the room.

By being slightly out of phase Ezra means that he is still aware of and responsive to external reality but that his attention is directed elsewhere toward internal processes. In his own words, "my mind is away." Sabrina also claims that external reality felt different. "Everything was in its place but it didn't feel the same." She cites an instance in which a friend interrupted her while in self-hypnosis. Sabrina was able to become aware of subtle nuances in their interpersonal communication not available to her in the waking state. However, rather than being less attentive to external stimuli, Sabrina is more sharply attuned to judging external reality.

Although external reality is experienced as qualitatively different, this difference may take different directions, toward more internalized or more externalized attentional focusing. A given S may respond freely wandered over thoughts and images, or, when necessary to draw on the concentrative skill developed in SH to more finely attune to external reality. Such a state implies more economic and accurate perception of reality.

Shor defines hetero-hypnosis in part as a feeling of generalized reality orientation (Shor, 19). The diachronic SH data does not only detail changes in reality testing during SH. Moreso, it details initial signs of reality construction based on extensive contact with internal cues. A similar process, though much more dramatic, takes place after extensive experience with other altered states of consciousness, e.g., LSD-induced states (Grof, unpublished), meditation (Beyer, 1974). In these profound states of consciousness, Ss with extensive experience over long periods of time reported a shift in the ontological status of their experienced state. SH evidence for a similar but much less developed sense internal reality construction suggests the possibility of researching the mechanisms by which psychic realities are gradually constructed.

8. Cognitive Organization of SH Behavior

The most clear cut diachronic fact for all five Ss is the loss of interest in continuing self-hypnosis according to the original experimental protocol. Journals and interviews for all Ss contained ample complaints that SH was becoming less interesting over time. Kevin's journal is the most dramatic example. Compalints mark the journal entries beginning with the second two-week session. These complaints were not so apparent in the first session. On the first day he claims that SH was easy but boring. On the second day he writes, "Not really very interested...My mind is considering a great deal." There are some of the final journal entries. Kevin never completed the final two-week session. Although the other four Ss did complete the final session similar complaints were found in all of the journals.

In the terminal group interview we decided to ask the Ss directly about their loss of interest. As no Ss knew of another S's self-hypnotic experience, each Ss was quite surprised and somewhat relieved to hear that they had not been the only S to lose interest. Here are the S's comments:

> Ezra: I felt it was really a pain to do every day for and hour, an hour and a half. You know it was just awful to push myself to do it. I did pretty well with it, but I just...it was really hard to do it.
>
> Kevin: Well, I found a point where I couldn't push myself anymore. It just didn't work. I mean, I could still go into trance, but I was just so uninterested that my mind wandered and I lost a great deal of concentrative power that I had in the beginning.
>
> Naomi: I felt like I was depleted. I needed input. I wanted something new to happen. I wanted some HH experiences...I remember going through a period where I really felt resentful. I really felt like I have to work hard enough on my own as it is, I would really like someone else to kind of do something with me.

Sabrina agreed with the above comments and added that for her the primary difficulty was not so much finding SH less interesting as in finding it undesirable to take the time to record the experiences in detail in the journal every day. Gwen was not at the group interview, but similar remarks are found in her journal. Here is a section of the entry of the final week:

> It's important for you to know that I'm finding it successively more difficult to get myself to do

> hypnosis. Each day I procrastinate doing it. It has become a chore, a routine. I no longer look forward to doing it, because I am forced to do it. It's not done out of choice.

It is important to note that despite these rather clear protests all of the Ss except for Kevin completed the four-week experiment. They were unpaid volunteers. Something, them, continues to motivate the Ss.

Some Ss were more specific in their complaint. Not only did they say that SH became more difficult; some also stated why SH became more difficult. It must be recalled that outside of the HH and ISH training sessions the Ss were given no formal instructions as to how to use their time each day during the four-week SH experiment. Two Ss complained that the loss of interest in SH was due to this intentional lack of structuring of the experience. On the second day Kevin writes in his journal, "Can't think of what to do for one hour. Perhaps I can't do it in such an unstructured atmosphere." This difficulty finding things to do during SH was resonated by Naomi.

> And I still would like to have more HH experiences just to learn new techniques, new input...so that I can just widen my use because you know, I felt that I...after all I got kind of bogged down in my own style and I was sure there were plenty of other things that I could be doing and other experiences, but I think there's only so far you can go on your own. I mean, I could have kept exploring myself and I will, you know, but I...I just am sure that there are other things that I could do...with more experiences in HH.

Naomi states elsewhere exactly why she wants more HH experience. HH provided her with a clear framework in which the hypnotist told her what kinds of things were possible during an hypnotic experience; in SH there was no clear framework and she wasn't sure what sort of experiences were possible in this self-hypnotic state.

It is especially interesting that despite such complaints Ss did find things to do with their self-hypnotic time. The difficulty lay primarily in "getting started" with SH each day. Ss complained that it was especially difficult finding the time of day for SH. However, once the SH experience started there was no longer any problem.

What Ss did with their self-hypnotic time yields a second important diachronic trend. A S's cognitive orientation to SH was less in terms of the standardized HH-ISH training sessions and thereby more individualized, revealing more privately meaningful use of self-hypnosis over time, Naomi's data suggests that it became more difficult over time for her to interpret her self-hypnotic behavior in terms of remembered HH experiences. Journals for all five Ss clearly show a trend away from standard hypnotic tasks at the onset of SH toward more individually suggested tasks and imagery. For example, all five Ss for the most part discontinued ideomotor tasks learned in the HH training sessions and used more imagery.

Data is amply available for all five Ss demonstrating a shift to a more individualized self-hypnotic experience over time. This shift takes two forms in our data. First, a great deal of SH time is taken up with exploration of mental events, e.g., dreams, imagery and thought trains. Second is the development of specific self-suggested tasks with highly privatized meanings. Naomi does both of these. First, was a greater preference for imagery experience and self-interpretation over learned HH tasks. She says, "I really enjoyed anything that was related to fantasy and dreams most of all. I mean, I got tired of levitating my hand and any kind of motor stuff." The greater bulk of Naomi's journal is a recording of imagery content and its interpretation. Also, she developed specific uses for SH. Interestingly, she says in the group interview that these privatized uses of SH or "programs" were the only thing that kept her motived enough to continue SH:

> I decided that the only way that I could do this was if I had a purpose in mind and my purpose was to get my proposal done. I felt that I was going to try and use the SH to control a lot of the junk, the anxiety, around writing a proposal. And that's one thing that really, I think, helped me with the motivation to keep going.

Likewise, Sabrina cites a specific personal task that SH came to be useful for:

> I think that the only thing that saved me was that I was able to use it for the kinds of things that I might have needed at the time. I could get rid of a headache...then I could get rid of other kinds of pain... for instance, like, now when I feel I'm tense...I know how to concentrate to get rid of things like that.

Sabrina, elsewhere, states that she also used self-hypnosis to improve studying. These two specific uses constitute most of her invested SH time in the final week of the experiment. In this way she was able to fit SH into her every day life pattern. Although less stressed, Sabrina also explored more dreams over time.

These data suggest a decreased variability of the SH experience over time. In the final SH sessions there was less chance for new discoveries and experimentation in the SH experience as time goes on. Instead of the wide variety of self-suggested tasks attempted in the beginning days of the experiment the Ss concentrate on a selected few personally meaningful tasks in the final days. These selected tasks are more privatized. There may be self-suggested tasks, e.g., improving study habits, self-therapy, relaxation. These tasks are directed toward individualized every day functioning. Or, there may be exploration of imagery, dreams, thought associations and age regressions tending toward a privatized review of one's life history. In both cases, the individualization of SH is clear.

Supportive evidence is available for the rest of the Ss. Ezra tried to keep coming up with "little assignments" that were "interesting" enough to maintain interest in self-hypnosis.

> I took specific problem areas that interested me about hypnosis, and particularly about my own personality in relationship to hypnosis, and I worked on these until I could come up with some answers that satisfied me... Now that's different from what I did the first two weeks. The first two weeks I went all over the place.

Some of these "specific problem areas" were improving concentration that could later be used in meditation; self-therapeutic exploration of dreams and imagery; self-therapeutic exploration of resistance to writing papers, tracing these resistances back to very early sources. Gwen spent the last week in SH imagining a piano to try to improve her playing, and exploring early childhood memories through regressive fantasy. Kevin, being unable to find enough specific tasks to interest him, did however, turn the experience more inward. He says, "I find myself just doing a great deal of word associations. Just trying to see what's going on in my mind...And I get very tired of that after awhile." He kept trying to look for more challenging experiences. Dissatisfied, and not being able to find a private area of interest sufficient to maintain interest, Kevin discontinued SH. The rest of the Ss were able to create specific tasks and to find interest in the exploration of their imagery.

Discussion

The loss of interest in SH over time is so apparent for all Ss that it needs explanation. Complaints given by a few Ss were in regard to the lack of structure in the SH experiment and their subsequent inability to find enough self-suggested tasks each day in SH. These complaints provide a clue. *It will be hypothesized that the loss of interest in SH was primarily due to the lack of an adequate cognitive framework by which to orient daily self-hypnotic behavior*. According to our hypothesis the data on loss of interest and also on the individualizing of SH behavior need not be incompatible. In both cases *what is observed over time is the process of constructing an individual interpretive scheme or cognitive framework for SH under experimental conditions in which no sufficient interpretive scheme was provided to a S.* This hypothesis assumes that the cognitive activity and self-interpretation of the SH state is a major defining factor of SH.

Research originally conducted by Schachter and Singer on emotional states (Schachter & Singer, 1962) has been extended as a conceptual model by which to understand the activity of a variety of states of consciousness (Brown, unpublished). Schachter's Ss were unknowingly given an injection of epinephrine. Schachter postulated that a particular emotional need necessitated both a given physiological state of arousal but also a "cognitive factor" by which to interpret the physiological change. In the absence of an adequate cognitive factor "evaluative needs" arose. The Ss tended to search the immediate social environment for a possible interpretive scheme for their aroused physiological state, whether or not the interpretive scheme was accurate to the state or not. The crucial role of a cognitive framework in the experience of any altered state is becoming increasingly acknowledged in the ASC literature.

Likewise, a "Schachter effect" may be operating in our own SH research. Our Ss were not given an adequate cognitive framework by means of specific instructions for daily self-hypnotic behavior. They were also isolated from other Ss. That "evaluative needs" arose may be indicated by the direct complaints found in the journals. The loss of interest seems to suggest that these evaluative needs were not sufficiently met. Our Ss were expected to construct their own cognitive framework for SH out of their continued SH experience, but also against the background of their understanding of their HH-ISH training sessions. The Ss were actually able to show clear signs that some sort of cognitive framework was being constructed over time. The cognitive frameworks in all cases were highly individualized and showed a less variation in SH experiences within each S over time.

Several factors are interesting. Ss were able to overcome their evaluative needs to some extent so as to construct a cognitive framework independent from any detectable influence from their immediate social environment. Ss were not allowed to discuss their experiences with anyone but the experimenter. SH remained largely a private affair. This is somewhat contradictory to Schachter's model which would predict the inability of Ss to construct an interpretive framework independent of the social environment. Moreso, it may be recalled that SH tended to be less like the HH training experience and more individualized over time. Again, contrary to what would be expected from the Schachter model, Ss tended over time to rely less on a hetero-hypnotic interpretive orientation to SH even if it was given to them according to the experimental protocol. The inconsistencies of our SH data with the Schachter model suggest that the model, which derived from synchronic experimentation, is not sufficiently applicable to the diachronic SH data. Whereas an interpretive framework for SH appears to be necessary, a socially derived consensual interpretive framework does not appear to be necessary, i.e., Ss figure out their own privatized meaning for SH.

Thus it appears that with extensive practice some Ss are able to construct a cognitive framework in a relatively privatized manner simply from the trial and error exploration of the state. For these Ss, SH is given a personal meaning and they continue with the SH experience and fit it more into everyday behavior and also into their general life pattern. It is hypothesized that those Ss who do not construct an adequate interpretive framework do not maintain sufficient interest needed to continue SH. Personality differences are expected.

This experimental design has proven a likely way to study SH accurately. We hesitated giving explicit instructions. As we did not know what SH was like we did not want to falsely program the Ss. Also, we did not want to increase experimental demand. Under these difficult circumstances Ss were forced to privately construct a cognitive framework for SH. We feel, with one qualification, that the individualized frameworks constructed were somewhat true to the SH state and not imposed from the outside by an experimental design. The one qualification is the HH training sessions. Quite accidentally the choice of HH training has given our study of SH definitional control. As some of our Ss have had experience with other ASCs it is entirely possible that their experience with SH would be colored by the cognitive frameworks developed for these other ASCs. Ezra's meditational bias is an example. The HH training given just before SH became a standardization of each S's experience against previous ASC experience. It became a guarantee that whatever conclusions were advanced as to the nature of SH remain more within the range of hypnotic behavior and less within the range of other ASCs, e.g., meditation or drug-induced states.

The HH training did, however, pose a limit. As long as there was an HH training session, one may still legitimately raise the question as to whether we are actually measuring self-hypnosis. That our Ss dropped the HH tasks over time is a satisfactory answer.

Comprehensive Discussion

I. Theory of Self-Hypnosis

It is typical of diachronic analysis to isolate single units of data and trace their changes over time. We have taken ten such units of diachronic fact. In each case evidence was abundant--though often not for all five Ss--confirming important diachronic trends. Both the fact that the experiment was highly unstructured and that the idea for diachronic analysis came in retrospect of all data collection suggests that our findings cannot be entirely written off as experimental demand. It cannot be denied, however, that the similarities in issues written in different journals relates in some way to the standardized training sessions.

What is the significance of identifying these diachronic trends? A weakness inherent in any diachronic method is its inability to deal adequately with the interrelationships between isolated diachronic facts (Saussure, 1959). A legitimate diachronic methods traces each diachronic fact in isolation from other analysed diachronic facts. Only after independently analysing a number of diachronic units is it possible to reflect upon their combination. Such combinations, however, transcend the rules of rigorous diachronic methodology and fall more within the realm of psychological theory construction. True to diachronic analysis, the data has been analysed as separate units. One theoretical construct has been advanced for each of these units. The task before us is to integrate these theoretical constructs and organize them into a theoretical matrix. The final significance in identifying diachronic trends is to be found in their contribution to a theory of self-hypnosis.

The emphasis of this paper is on its contribution to theory rather than on hypothesis-testing and measurement. The hypotheses advanced in each section are only tentative. An attempt has been made to develop a theory of self-hypnosis based on these hypotheses. This theory is now being used to generate a coherent body of questions that can be given in questionnaire and interview form at a future time to a large population of SH subjects.

By way of summary, self-hypnosis can be viewed as follows: The hypnotic relationship, especially its transference and role playing dimensions, is an important defining characteristic of hetero-hypnosis. Analysis of the SH journals indicates that both the evidence for hypnotic transference and self-enacted role-playing tend to drop off with extended SH experience. An implication is that the experience given by the experimental protocol more closely approximates the essence of 'self' hypnosis over time. By the disappearance of these dimensions self-hypnosis becomes more clearly distinct from hetero-hypnosis and warrants study in its own terms.

The data suggests that the most distinctive feature of SH over time is its adaptive dimension. A number of theoretical constructs have been advanced to shed light upon this process of adaptation. Upon initial SH inductions certain cognitive and affective changes were experienced by four Ss as unpleasant. These changes did not occur with greater SH experience. Self-hypnosis may be an unstable state for the naive S but seems also to show increasing stabilization with extended practice. One aspect related to this stabilization is the process of automatization. Both the means of inducing trance and the process of giving self-suggestions while in trance becomes automatized. There is also a greater fading of the "generalized reality orientation" and a concomitant development of "special orientations" over time. That is to say, self-hypnosis becomes internalized.

Our diachronic theory of self-hypnosis gives a pivotal position to the concepts of attention cathexis. It is assumed that a certain amount of attention is invested in the process of self-suggestion--both those suggestions given to induce trance and those suggestions given while in trance. With automatization of the self-suggestive process this attention cathexis is freed. A certain amount of attention is also invested in the scanning of and the response to specific external stimuli as well as in the maintenance of a generalized reality orientation. With the decreased vigilance to reality and the fading of the GRO over time, again attention is freed. The attention freed as a result of these different processes can now be directed to other ends, namely towards a greater exploration of one's own introspected internal environment. Over time the awareness of an internal environment increases both quantitatively and qualitatively. Quantatively the S is aware of a greater number of thoughts, memories, imagery, and physiological processes. Qualitatively, the S participates more fully in these; with greater affective investment at times; and with keener awareness of the subtle delimitations, types, details, and interconnections between these mental events. For some Ss this internal environment has more regressive features over time. Exploration of imagery and hypnotic dreams both for purposeless playfulness and for intentional problem-solving appears to be the main preference of our Ss among the possibilities of this internal environment.

The attention by which a S explores this internal environment appears to be bimodal. First, there is an exploratory mode of attention which is at times receptive and free-floating, wherein the S reflects upon the experienced mental events. Long-standing personal preferences or momentary fascinations play an important role in self-hypnotic attention. Some of the experienced mental events will prove more interesting and the S may wish to engage in them with more active attention. This dynamic interplay of receptivity and active engagement together constitute a very specific mode of attention--which we shall call 'exploratory attention'. Mental events of particular interest to the S may be transformed into self-suggestions and carried out through the use of deep concentration. This deep concentration is the second mode of attention specific to SH. However, both the exploratory attention and the deep concentration should not be seen in isolation but rather in dynamic interplay throughout the Ss' experience.

The adaptation to the self-hypnotic experience is largely cognitive. Ample evidence is available to suggest that a S not told what to expect in SH constructs for himself an interpretive scheme for his SH experience over time. That is to say, each S begins to construct a self-understanding of what self-hypnosis is to him. The specific modes of attention operating in SH and the nature of the experiences selected from within the S's internal environment are assumed to be important components in the constrcution of this interpretive scheme over time. From our data it is difficult to advance generalizations as to the nature of these interpretive schemes in SH. It is, however, very clear that the interpretive schemes become highly individualized and idiosyncratic. Concomitantly, the nature of the mental events selected for self-suggestion become highly selective and less variable over time. Self-hypnotic experience then becomes more personally meaningful in two ways. First, the S develops highly specific self-suggested tasks with more direct application to everyday life functioning, e.g., improving study habits. Second, there is a greater utilization of thoughts, imagery, memory and age regression for the review of one's personal life history. Often, these experiences are of a problem-solving nature. It also appears that SH becomes more personally meaningful. It is no longer possible to separate a S's introspective conceptual framework for SH from his personal application of SH. In the interviews, Ss were asked directly what SH was. No S gave a short and clear definition of SH that could be generalized across Ss. All gave fragmentary and highly personalized comments. Therefore, it was very difficult to define the nature of the cognitive processes in SH across Ss.

The importance of the construction of a highly individualized internal environment is emphasized by the data on reality construction and the data on age regression and dreams. These data suggest that extended experience with the self-hypnotic state results in an internal environment that is invested with reality qualities in its own right over and against waking reality. Functioning within this internal environment can at times be regressive.

II. Comparative Method: SH vs. other ASCs

The theory of self-hypnosis tentatively advanced in the previous section as it stands is inadequate even as a theory. A further question must be raised and answered: How are the various components of this theory specific to self-hypnosis and thereby distinct from other states of consciousness that experimental data is available for? Those states of consciousness most closely akin to our data on self-hypnosis, e.g., heterohypnosis, meditative states, and psychoanalytic free association. An adequate theory of self-hypnosis must clearly indicate both the similarities and differences between SH and these related states. The present formulations are an initial exercise in the author's attempt to develop a comparative method for states of consciousness.

Some of the theoretical constructs raised by our SH data may be applicable to other states of consciousness. The present data offers a theory of internal adaptation that may be applicable to altered states of consciousness in general. Due to the lack of diachronic methodology in ASC research the concept of adaptation to a given state of consciousness has not been fully appreciated. Some of the mechanisms by which this adaptation takes place may apply not only to SH but to other states of consciousness. For example, relinquishing reality testing, automatization of induction and performance within the state and stabilization of the state may be applied to herero-hypnosis and meditation as well.

The concept of learning to adapt to one's own internal environment as revealed in our SH diachronic data raises an interesting problem for the way adaptation has been used in psychoanalytic ego psychology. Generally, adaptation means adaptation to physical reality. Even the concept of fantasy for Hartmann is a "detour" serving adaptation to the external world (Hartmann, 1958). Our data suggests that our traditional understanding of adaptation is insufficient. When studying states of consciousness diachronically we are reminded that a theory of adaptation must also account for the realm of adaptation to one's own internal world. Within the history of religions yogic and shamanistic epistemologies have always implicitly held a theory of internal as well as external adaptation and are therefore more generalizable than our own psychology on certain issues (Brown, unpublished).

Not only does the SH data invite some theoretical constructs that may be applicable across states of consciousness, it also contains some constructs that may be used to distinguish SH from other closely related states. An assumption made is that a comparative method for states of consciousness must first demonstrate its efficacy for closely related states before attempting more diverse comparisons. The comparative categories used for distinguishing the states are: attentional mode; interpersonal dimension of the state (cf. Shor's "Role playing" and "Archaic involvement" [Shor, 1962]); nature of the internal environment; interpretive scheme for the state. It has been argued that an analysis of the specific modes of attention may be the key comparative category for distinguishing states of consciousness (Silverman, 1968; Brown, unpublished).

The term exploratory attention has been used purposefully to distinguish SH from meditative phenomena and hypnosis. In experimental hetero-hypnosis, particularly when using standard scales, exploratory attention is inhibited by the constant hypnotic suggestions which focus the S's attention in highly defined ways. The author also believes that SH is to be distinguished from meditation primarily in its characteristic mode of attention. For example, two attentional modes are given in many classical meditative systems. Mindfulness is a detached awareness of all mental moments without responding to them by focusing attention and following their transformations. One-pointed concentration is a profound concentration on a single object in which all other mental events are excluded. The exploratory attentional mode in SH is not so extreme as meditative mindfulness, nor is SH concentration as extreme as meditative one-pointed concentration. Thus, although these distinctions are highly speculative, I would expect that a detailed analysis of the attentional modes in SH would support that SH is different from meditation and HH in important ways.

It must, however, be pointed out that in post-classical meditative systems this careful distinction between mindfulness and concentration collapsed so that some contemporary systems of meditation may use modes of attention similar to self-hypnosis.

Psychoanalytic free association is difficult to distinguish from the exploratory attention characteristic of SH, although there may be important subtle differences. Free association does however lack the deep concentration developed in SH. The difference between free associative states and self-hypnosis must be found along other dimensions than analysis of their respective attentional modes. Evidence for the diminished importance of transference phenomena in SH is in direct contrast to the importance of transference in psychoanalytic free association.

The nature of the internal environment can also be used as a distinguishing factor between these four states. An internal environment includes all experienced mental events: associations, thought, imagery, memories, subjectively experienced physiological processes. There appears to be a different selective emphasis given to various aspects of this internal environment in each state. Imagery was the predominate interest for our SH Ss. In meditation (with the exception of the tantras) there is little use of imagery. Emphasis is on unselective awareness of all mental moments in some systems, or the construction of an introspective physiology in others (Brown, unpublished). Internal reality construction is much more an issue in meditation than in SH. These differentiations are of course overgeneralized and merely a matter of degree.

The source and nature of the interpretive scheme is also a useful distinguishing factor. In HH the understanding of the experience is partially mediated by the hypnotist. Even more so, meditation is classically practiced within a well-defined symbol-system and its understanding is mediated by the meditation master. Our evidence on SH suggests that Ss tended to supplement their standardized understanding of hypnosis as given in the training sessions with the construction of more individualized interpretive schemes. It is precisely this individualized interpretation of the state that distinguished SH from HH, meditation and psychoanalytic free association.

Below are summarized the similarities and differences between SH and related states according to these theoretical categories. I should be apparent why these are related but not identical states.

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Similarities: Dimensions of adaptation to SH: automatization; fading of GRO; less reality testing; stabilization of the state over time.

Differences:	SH	experimental HH	PSA. free association	meditation
attention	exploratory attention deep concentration	focused attention	free floating attention, no deep concentration	mindfulness; one-pointed concentration
interpersonal involvement during the state	(---)	directing attention in defined ways	undirected attention except for interpretive intervention	(---)
selectivity from internal environment	accent on imagery	no internal environment experienced in any great degree	accent on emotionally charged and resistive mental events	unselective, or introspected physiology
interpretive scheme	individualized	mediated by hypnotist	pt-analyst reconstruction	well-defined symbol syste mediated by guru

A major goal of ASC research should be towards the development of a comparative method for different states of consciousness. What categories and criteria need to be developed so that the similarities and differences between hypnosis, meditative states, drug-induced states, etc., can be discovered? At this very early stage of development of the ASC field a comparative method is best worked out between significantly similar states of consciousness rather than very diverse states. The choice of self-hypnosis allows the developing of a comparative method from empirical data collected to contrast very similar states--

hetero-hypnosis and self-hypnosis, and then to generalize to other related states, e.g., meditative and free association states. At a future time, perhaps comparisons between seemingly more diverse states, e.g., self-hypnosis and drug-induced states, or dreams can be attempted based on the results from the more limited scope comparisons.

III. Implications of Diachronic Methodology for the Study of Self-Hypnosis

Basic research on self-hypnosis is promising as a contribution to our understanding of states of consciousness. A goal of ASC research should be to generate a theory of states of consciousness, their mechanisms and organization, and eventually a general theory of consciousness firmly grounded in empirical research. Following a methodological program first suggested by Rapaport (Rapaport, 1967) we believe that it is necessary to collect data on a variety of states of consciousness before a theory of states of consciousness and consciousness can be advanced. A significant body of research literature exists for only a small number of altered states of consciousness, notably dreams, heterohypnosis, psychedelic drug-induced states, sensory deprivation and meditation. Full-scale research on self-hypnosis would add to our knowledge of a variety of states of consciousness toward a theory of states of consciousness.

The synchronic categories developed to compare SH to HH have undergone important modifications through diachronic analysis.

A category used in the synchronic study to distinguish SH from HH has dropped out over time. Formal self-suggestive strategies become less apparent, and with it, a loss of a means of distinguishing between SH and HH in this manner. New categories appear in the diachronic study that were not readily apparent in the synchronic study, e.g., subjective awareness of physiological processing and reality construction in SH. Other categories do not change, but the SH phenomena within these categories undergo important changes. For example, the category of imagery is still an applicable dimension of self-hypnosis in both synchronic and diachronic analyses. From diachronic analysis we learn much more about the role of imagery in SH than was initially concluded from the synchronic studies. Still, other aspects of SH exhibit very little changes over extended periods of practice. The exploratory attentional mode appears to be relatively constant throughout SH experience.

The shifting of SH categories and/or the nature of the experiences depicted in each category has an important implication: the synchronic and diachronic conclusions will always be in some conflict. Each methodology partially distorts and partially reveals the nature of SH. Each, then, has certain advantages and disadvantages over the other methodology.

Synchronic analysis is most useful in disclosing the similarities and differences between HH and SH. It is able to advance certain generalizations about the SH state. A major criticism against synchronic analysis, as presented in our previous SH research is the doubt as to whether it actually can reveal the most salient features of SH. This criticism holds also for Shor and Easton's. Hilgard's and Ruch's SH research, i.e., all that use only one SH experience. It does not hold for our current synchronic study because in that data stem from early and late reports. Our own synchronic analysis does, however, ignore changes in SH phenomena over time and thereby misses essential dimensions of SH. The diachronic study shows that the initial self-hypnosis is subjectively experienced as being somewhat alien even for experimental HH Ss. The subjective reporting of these initial SH experiences are distorted by affective response. Ss initially do not report important aspects of SH experience, presumably because these appear only with extended practice.

Although the synchronic studies fall short of advancing comprehensive generalizations about the SH state they do suggest another area warranting further inquiry. These studies may yield extremely valuable data on individual personality variations in initial SH experience. That is to say, larger populations of naive Ss given only a small number of SH experiences may yield a typology of reaction types to initial SH experience. The very different initial reactions for our five SH Ss is suggestive of personal differences in response to the SH state. This question of reaction types in response to a given ASC has been largely ignored in the ASC literature with one important exception (Barr and Langs, 1972).

Diachronic analysis, on the other hand, quite effectively illuminates the changing aspects of SH. It has several disadvantages. First. if self-hypnosis is assumed to contain important adaptive changes over time, there is no point of constancy at which to advance generalizations about the SH 'state'. At present, we have somewhat arbitrarily avoided this problem by assuming that the major adaptive changes within SH are completed by the end of three weeks of daily session. The relatively minor changes in journal content between weeks three and four relative to earlier weeks is slightly supportive of this methodological decision. Second, because diachronic analysis is done with isolated variables it has trouble putting its conclusions together into a total picture of the SH state. To surpass this difficulty we have rather prematurely ventured into the realm of psychological theory construction. At this stage of the research the most plausible strategy is to attempt to coordinate the independent conclusions derived from autonomous synchronic and diachronic methodological perspectives into an approximation of the SH state.

IV. Implications for the Study of Hetero-hypnosis

The contrast of synchronic/diachronic methodology may have implications for the study of hetero-hypnosis. It must be cautioned that the type of diachronic conclusions in our present study are not directly applicable as a paradigm to most HH research. Our conclusions are based upon subjectively reported data. Most HH is behavioral. For example, behavioral studies on the alteration of hypnotic susceptibility have given highly controversial results. Hilgard's interpretation of the general trend of these results is that hypnosis susceptibility is fairly stable and does not exhibit marked alterations unless special techniques are used in repeated practice (Hilgard, p. 70). Since our SH study handles a different field of data--introspected over behavioral--it in no way contributes to a clarification of this controversy. Hilgard does, however, mention that the number of HH sessions in his own research on susceptibility stability was rather small. The question of behaviorally measured diachronic trends in HH must remain open.

Although it is not possible to say that hypnotic susceptibility and other behaviorally measured aspects of HH are effected by diachronic trends, it is more reasonable to question whether the subjectively experienced dimensions of HH undergo changes over time. This question has not received attention in the HH research literature. A related question is the extent to which significant changes in the subjective dimensions of HH effected changes in the more enduring dimensions of HH such as susceptibility. As these subjective changes are largely cognitively based they may not be adequately observed in an experimental setting where a standardized, well-defined cognitive framework is given to orient each S in repeated sessions. These cognitive changes are perhaps more readily observable in less rigorous setting, e.g., clinic where the interpretation of each HH session is somewhat different from the previous. Thus, the synchronic/ diachronic problem may be a way of understanding the longstanding conflict between clinical and laboratory research on HH around the issue of hypnotic 'training'.

V. Implications for the Study of Altered States of Consciousness

The choice of self-hypnosis over other possible states of consciousness has the distinct advantage of contributing to the advancement of methodology in ASC research. Firstly, self-hypnosis is a state which can be studied both synchronically and diachronically. Synchronic and diachronic methodological options in the study of ASCs have been reviewed for their respective merits and limitations (Brown, unpublished). Synchronic study aims to delineate the type of psychological organization and functioning and also the physiological correlates for an altered 'state'. The use of a large number of inexperienced Ss in such studies is meant to yield generalizations on the nature of the 'state', especially the alterations in psychological and physiological functioning as compared to a normal working standard. Diachronic study generally uses a smaller number of more experienced Ss in order to trace the adaptation to a given state of consciousness over time and also the changes over time in psychological functioning within that state, especially the appearance of new rates of cognition, perceptual cognization and reality construction. The synchronic/diachronic bifurcation in ASC methodology has led to some interesting problems: (1) Synchronic and diachronic research on the same states of consciousness often lead to very different research conclusions. (For example, compare Klee's synchronic analysis of the LSD induced state to that of Grof's diachronic analysis: Klee, 1963; Grof, unpublished.) (2) The predominance of synchronic methodology in ASC research has resulted in a neglect of some of the most important questions about altered states of consciousness, namely the possibility of new cognitive, perceptual, and reality organizations discontinuous with waking functioning. The choice of self-hypnosis was made in part because of its very clear diachronic thrust. Although our findings may have little direct bearing on the latter problem, self-hypnosis is a state in which synchronic and diachronic methodologies can be carried out simultaneously without too much difficulty, thereby presenting an example in which the exclusiveness of synchronic and diachronic conclusions extant in the ASC literature to date can be overcome.

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The Relationship between Self-Hypnotic Experience and Personality Factors as Revealed in Psychological Testing

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A paper to be read in New Orleans, Aug. 31, 1974, as
part of the Symposium:

An Investigation of Self-Hypnosis from a Variety
of Methodological Perspectives

This portion of the Symposium deals with the following question: In what ways might an individual's personality, as indicated by his performance on psychological tests, help account for his particular way of experiencing self-hypnosis?

The general procedure consisted of three steps: First, a number of measures were developed for characterizing each subject's self-hypnotic experience. The emphasis was on finding measures which were quantifiable and which could be derived by systematically scoring the journals (in which the subjects recorded their experiences with self-hypnosis). Six of the 13 measures rlate to the frequency with which the subjects participated in various self-hypnotic activities, namely, dreaming, practical tasks, attention to physical sensations, hallucinating, age regression, and motor responses. Four additional measures were developed to differentiate qualitatively between the the subjects' experiences; these are the measures of Extreme Emotionality, Fantasized Hypnotist, Goal-Orientation, and Spontaneity vs. Control. The final three measures relate to self-hypnotic abilities: Hallucination Ability, Dreaming Ability, and Overall Ability at Self-Hypnosis.

Second, three psychological tests, which had been administered to the subjects prior to the self-hypnosis experiment, were scored and inter-

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preted. These tests were the Rorschach, the MMPI, and the Personality Orientation Inventory (POI).

Third, we undertook to relate the measures of self-hypnotic experience to the psychological test data; we considered one measure at a time and searched for possible correlations with scores on the psychological tests. In investigating for possible correlations we were guided by common-sense hypotheses. For example, we thought that since dreaming is a form of fantasy perhaps Dream Frequency during self-hypnosis would be correlated with movement responses, a prime indicator of fantasy on the Rorschach.

There is not time for a thorough discussion of our results, but to give you a better idea of our procedure I will describe in some detail our investigation of this correlation.

Dream Frequency was assessed by reading the journals and computing for each subject the percentage of days on which he reported attempting or experiencing a dream while in self-hypnotic trance. The criterion used was simply whether or not the subject specifically referred to the experience as a dream. For example, Ezra (a pseudonym for one of the subjects) reported attempting or experiencing a dream during trance on 12 of the 23 days in which he practiced self-hypnosis; hence his Dream Frequency percentage is 52%.

As I have noted, we decided to investigate whether Dream Frequency and movement on the Rorschach appeared to be correlated. Here is what we found: Kevin was very high in Dream Frequency with a percentage of 92 and also very high in movement with 7 M responses. Naomi was next highest in Dream Frequency with 68%, and she also had a high number of M's: 5. Ezra, whose Dream Frequency percentage was 52%, also had 5 M's. Gwen and Sabrina, who were lowest in Dream Frequency with percentages of 36% and 24%, respectively, were also lowest in M with only 2 responses each.

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The similarity between the subjects' results on the measure of self-hypnotic experience, Dream Frequency, and their results on the psychological test score, movement responses, is striking; this is what we called a "strong correlation." When we found a somewhat weaker correlation--with perhaps one subject being out of order--we called it a "moderate correlation." Otherwise, we spoke of "no correlation."

At this point I would like to make the reasoning behind our procedure explicit. Self-hypnosis is a new area of research, and there has been no previous attempt to relate personality factors to self-hypnotic experience. Therefore, we thought it appropriate to undertake hypothesis-generation, not hypothesis-testing. Furthermore, with five subjects--we had sufficient data on only five of the six subjects to consider them in this portion of our analysis--it is not possible to test specific hypotheses.

Consequently, we developed the procedure I have described. We thought an atomistic approach, comparing each measure with single scores on the psychological tests, best-suited for generating hypotheses which could be tested in research with a larger number of subjects. When we speak of "strong" or "moderate" correlations these should be understood to be possible correlations which our data have suggested and which are amenable to future research.

All of this having been said, I can go on to summarize the three sets of findings.

The first set of findings suggests that personality plays a large role in determining the activities with which a subject spends his time while in self-hypnotic trance.

For example, as I have explained, subjects with a capacity for fantasy, as indicated by movement responses on the Rorschach, tend to

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spend time dreaming while in trance.

Similarly, it appears that relatively unemotional subjects and socially-introverted subjects tend to use self-hypnosis to do practical tasks, such as helping themselves to study better. There was a moderate correlation between the Frequency of Practical Tasks measure and a paucity of color responses on the Rorschach, and a moderate correlation between the Frequency of Practical Tasks measure and the Social Introversion scale on the MMPI.

The implication of these findings is that an individual molds the self-hypnotic experience to his interests and capacities. But, as both Dan Brown and Joab Oberlander, the two preceding speakers, have commented, it appears that in some ways the characteristics of the state of self-hypnosis determine how a subject will experience the state. This observation would help explain some of the negative findings. For example, one of our measures was Frequency of Attention to Physical Sensations; we computed how often each subject reported noticing sensations such as muscle tremors and rate of heartbeat during self-hypnosis. We thought that perhaps this measure would be correlated with the Hypochondriasis scale on the MMPI or Anatomy responses on the Rorschach since these latter two scores reflect a heightened interest in bodily sensations. But we found no correlation. The suggestion is that the extent to which a [illegible] subject pays attention to bodily sensations during self-hypnosis does not depend on the extent to which he pays attention to such sensations while not in trance; instead it seems to depend more on the characteristics of the state.

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The second set of findings suggests that the quality of a subject's experience in self-hypnotic trance--as well as the frequency with which he undertakes various activities--is related to personality traits.

For example, we noted which subjects had reported experiencing Extreme Emotionality, such as bliss or great fear, at any time during trance. We found a strong correlation between this measure of Extreme Emotionality in self-hypnosis and general emotionality, as indicated by color responses on the Rorschach.

Similarly, we noted whether the subjects ever fantasized a hypnotist while in trance and found that the ones who did were also the ones who evinced an especially strong interest in object relations on the Rorschach as indicated by movement and human figure responses.

The third set of findings deals with personality and self-hypnotic ability.

On the whole our attempts to relate personality traits to specific abilities in self-hypnosis yielded somewhat equivocal results. But one interesting finding emerged. We measured Hallucination Ability by computing how often a subject who reported attempting a hallucination while in trance was successful. We found a moderate correlation between Hallucination Ability and the capacity to relax reality testing, as indicated by a relatively low Sum [illegible]F+ percentage on the Rorschach.

However, we had somewhat more success investigating Overall Ability at Self-Hypnosis. The measure of Overall Ability was compounded of a number of the other, less comprehensive measures, such as Hallucination Ability, Dream Ability, and Extreme Emotionality.

We found strong correlations between Overall Ability at Self-Hypnosis and the following psychological test scores: Color on the Rorschach, an indication of emotionality; Spontaneity on the POI; and Self-Acceptance

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on the POI. We found moderate correlations between Overall Ability and the following scores: movement on the Rorschach, an indication of fantasy; Inner-Direction on the POI; and Acceptance of Aggression on the POI.

In conclusion, our attempts to relate personality factors and self-hypnotic experience yielded a number of possible correlations which we view as amenable to investigation in future research. Most personality research in the hetero-hypnosis field has dealt with the question of susceptibility. One implication of our research is that, in the field of hetero-hypnosis research as well as the field of self-hypnosis research, it might well be fruitful to investigate not just susceptibility but also how personality factors help account for the idiosyncratic way an individual experiences trance.